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[COMMITTEE PRINT]

TECHNICAL ASPECTS OF THE DISTRICT'S TAX SYSTEM

STUDIES AND PAPERS PREPARED FOR THE DISTRICT OF COLUMBIA TAX REVISION COMMISSION

AS SUBMITTED TO THE

COMMITTEE ON THE DISTRICT OF COLUMBIA
HOUSE OF REPRESENTATIVES
NINETY-FIFTH CONGRESS
SECOND SESSION

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LETTER OF TRANSMITTAL

U.S. House of Representatives,
Committee on the District of Columbia,
Washington, D.C., November 29, 1978.

Dear Committee Colleague: I have the pleasure of transmitting herewith for use by the Committee on the District of Columbia part of a report entitled FINANCING AN URBAN GOVERNMENT: A COMPENDIUM OF TECHNICAL PAPERS PREPARED FOR THE DISTRICT OF COLUMBIA TAX REVISION COMMISSION. This report was prepared pursuant to District of Columbia City Council Resolution 1–149 of 1975. The compendium provides a detailed analysis by twenty experts in state and local public finance on nearly every aspect of Washington's tax system. Michael E. Bell and Robert D. Ebel shared responsibility for editing this volume. Margaret J. Moore served as the Commission's administrative and contracts officer for the report. Emmett J. Rice was the Commission's chairperson.

Like most U.S. cities, Washington, D.C. is facing the problem of a long run fiscal imbalance—the built-in tendency that, as time passes and the economy grows, the amount of new monies generated by the City's revenue structure is less than the amount of new expenditures generated by the existing program structure. Thus, although the District government's proposed budget is balanced through Fiscal 1979, the D.C. Office of Budget and Management estimates that if the scope and quality of the City's public service commitments are maintained at their present levels, Washington will face a fiscal gap of $285 million by 1983.

In response to this concern, the District of Columbia established a Tax Revision Commission which was charged with producing both an analysis of the City's revenue base and structure and a set of recommendations for developing innovative, efficient and equitable revenue sources.

Accordingly, the Commission examined the economic, structure and equity issues of nearly every type of state and local revenue source, and its major alternatives. As a result, its study is not only among the most comprehensive of its kind undertaken by a state or local government, but also represents the first look by any District of Columbia Home Rule government at its tax and revenue system. Although the Commission reached more than sixty recommendations for policy changes in the City's tax structure, it also concluded that, under existing political and legal arrangements, there are no great hidden and untapped revenue devices which will provide the "solution" to the District's fiscal problems.

The Commission's Report has been published by the District of Columbia and includes twenty-one chapters which provide the factual, institutional, economic and analytical background against which the

Commission considered the various tax issues and reached its conclusions. The specific recommendations of the Commission follow the discussions in the several chapters.

In addition, the Commission engaged consultants to prepare research papers on various technical aspects of the City's tax system. It is these papers which are contained herein. Because of the high quality of this research it is certain that the papers in this volume will provide a framework for District of Columbia policy decisions well beyond the life of the Commission itself.

Sincerely,

CHARLES C. DIGGS, Jr.,
Chairman, Committee on the District of Columbia.

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(By David Greytak)

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CHANGES IN THE STRUCTURE OF EMPLOYMENT AND TAXATION: REVENUE IMPLICATIONS, WASHINGTON, D.C.

(By David Greytak, Associate Professor of Economics and Associate Director, Metropolitan Studies Program, Syracuse University and Edward M. Cupoli, Assistant Professor, Department of Urban and Metropolitan Studies, Michigan State University)

I. Summary of Findings

1. In Washington, D.C., as in most cities, government and the service sectors are the areas of major employment growth. However, as these sectors account for 70 percent of total employment in the District, the extent of employment concentration surpasses that of all other major cities; government accounts for 45 percent of total District employment while employment in the service sector amounts to 26 percent of total employment (1975).

2. Most people—fully 67 percent—who work in the District are suburban incommuters. The number of incommuters employed by government alone exceeds 181,000 (72 percent of all government workers). Only in the trade sector do less than 60 percent of employees (58 percent) commute into the District from the suburbs.

3. Generally, average wage and salary earnings of incommuters ($14,833) are much higher than those of noncommuters ($11,355). In fact only in the government sector is the earnings differential between commuters and noncommuters less than $2,000.

4. In relation to employment, tax revenues are high in those activities which are declining in the District. Alternatively, tax revenues are low in relation to employment in the growing employment sectors: government, service, and construction. These differences imply that without revision in the tax structure, continuation of recent patterns—a growing concentration in the government and service sectors accompanied by declining employment in the rest of the District's private economy—will yield annual increments in tax revenues which are small, e.g., roughly $3.39 million (constant 1975 dollars) a year.

5. The replacement of the current property tax with a tax on land values only does not greatly alter the short-term prospects of slow growth in tax revenues. In fact, due to the sluggish performance of most sectors of the private economy in the District, levying the property tax on land values may result in revenue increments which would be smaller than those which the existing tax system would yield.

6. Since such a large proportion of workers in the District are incommuters with relatively high earnings, commuter incomes provide a substantial and untapped revenue source. A commuter earnings tax

allowing a $6,500 standard deduction with a flat 1.5 percent tax rate would yield approximately $31 million in new revenue in its first effective year. Commuter taxes with more progressive rate structures would yield even greater amounts of revenue. For example, with a standard deduction of $750, a commuter income tax with rates one-third of these of the District's resident income tax would initially yield roughly $91 million in new revenues. With a $6,500 standard deduction, taxing commuter at the same rate as District residents would initially yield $160 million.

7. If recent patterns of change in the structure of the District's economy continue, the prospect for growth in tax revenues is much improved with the taxation of commuter incomes. In fact, depending upon the structure of the commuter tax, the revenue increments (beyond those which would result initially) are likely to be in the neighborhood of 60 to 100 percent larger than they would be without the commuter tax.

I. Introduction

Changes in the level and composition of employment in urban centers and the performance of central city tax systems are at the heart of the urban fiscal crisis. While each of these topics has been extensively and separately researched, only recently has a link between a city's economic structure and the revenue yields of its tax system been established.[1] It is this link, i.e., the relationship between revenue yields of the tax system and change in economic structure, which is of interest in this study of Washington, D.C. While revenue forecasting is not the issue addressed here, the long-run productivity of the District's tax system is an important concern, and one which we will have occasion to take up later. The specific purpose here is an evaluation of the revenue responses of the District's tax system to changes in the level and structure of the District's economic base. The policy goal of this analysis is to determine what the changing level and composition of the District's employment—toward heavier concentration in the government and service sectors—means for the revenue yields of the District's current tax structure, and how these yields may be affected by alterations in that tax structure.

The scope of this analysis is limited in terms of both taxes considered and the time period analysed. The focus on the four principal forms of taxation, and eight specific taxes are considered: the real property tax, the individual income tax, the sales, and business taxes (i.e., the corporation and unincorporated business franchise taxes, the financial institutions, the insurance and public utilities taxes). In addition, two types of major revisions in the tax structure will be considered: the substitution of a land value tax for the current real property tax, and the imposition of a commuter income tax.

The paper is divided into three sections. The first includes a brief consideration of the yield performance of the tax system and recent changes which have occurred in the District's employment structure. The second section considers the relation between the yields of the current (1975) tax structure and the composition of the District's em-

[1] See Bahl, Roy W. and Greytak, David. "The Response of City Government Revenues to Changes in Employment Structure," Land Economics, Vol. 52, No. 4 (November, 1976); and Bahl, Roy W., Campbell, Alan K., and Greytak, David, "Taxes, Expenditures and the Economic Base," New York: Praeger Publishers, (1974).

ployment. Also examined here are the implications for the revenue yield of the tax system of replacing the current real property tax—on land and improvements—with a tax on land values only, and the yield implications of the addition of a commuter income tax. The Third section presents a summary of the analysis and evaluates the revenue yield implications of changes in the current tax structure.

HISTORICAL REVENUE GROWTH

Total revenues received by the District increased by about 163.8 percent (Table 1) over the 1967–75 period, or at an average annual rate of about thirteen percent. However, the average annual growth rates of revenue raised from the District's own sources are lower (roughly nine and one third percent), the result being that own source revenues just doubled over the period. As a result of the relatively slow growth in own source revenues over the period, the District's dependence on other revenue resources increased. This is reflected in a decline in the percent of total revenues raised from own sources from about seventy-five to fifty-eight percent between 1967 and 1975.[2] Thus, in the most general terms, the picture is one of fairly rapid revenue growth accompanied by a declining revenue self-sufficiency.

TABLE 1.—GENERAL REVENUES, PER CAPITA GENERAL REVENUES, GENERAL REVENUES RAISED FROM OWN SOURCE, PER CAPITA GENERAL REVENUES RAISED FROM OWN SOURCES, AND PROPORTION OF GENERAL REVENUES RAISED FROM OWN SOURCES, WASHINGTON, D.C.; 1967–75

Years	Total general revenues (thousands)	Per capita total general revenues	Revenues raised from own sources (thousands)	Per capita general revenues raised from own sources	Percent of total general revenues raised from own sources
1967	$361, 979	$456. 5	$272, 906	$344. 1	75. 39
1970	561, 236	741. 9	388, 542	513. 6	69. 23
1972	704, 663	960. 3	458, 523	624. 9	65. 07
1974	937, 991	1, 296. 6	534, 253	739. 2	57. 01
1975	954, 991	1, 333. 8	554, 222	774. 1	58. 03
Percent change, 1967–75	163. 82	192. 18	103. 08	124. 96	

Sources: "Financial Report, Fiscal Year 1975," District of Columbia, October 1975, p. 27. Population from U.S. Bureau of the Census, Current Population Report, "Population Estimates and Projections," 1973 population estimates were used for fiscal year 1972.

These revenues, of course, are what provide the District with the ability to supply public services to its population. Overall, these revenue increases, when coupled with a slower rate of population increase, result in a substantial increase in per capita revenues. Still, it would be difficult to argue that even the fairly substantial increase in revenue per capita can be translated into comparable increases in the levels of public service available to the District's population. No doubt, the rapid inflation which occurred during the seventies has eroded a substantial part of the District's purchasing power. Regretfully, a measure similar to a cost of living index is not generally available for local government purchases; therefore, there is no sure way

[2] Virtually all cities experienced a similar decline in the proportion of total revenues raised from own sources; see Advisory Commission on Intergovernmental Relations, Significant Features of Fiscal Federalism 1976–77, Vol. II. Washington, D.C. March, 1977, p. 32.

to gauge the amount of purchasing power that the District has lost to inflation. However, special studies of the inflation impact on state and local governments do indicate that inflation has taken its toll on state and local governments.[3] For example, it has been estimated that inflation may have increased the prices of the goods and services purchased by local governments by as much as twenty-two percent between 1967 and 1972, and that these same prices may have increased by at least that much again during the two years following 1972. (see footnote 2)

If, in allocating revenues, District officials have actually confronted price increases of the magnitude suggested above (i.e., 44 percent increase between 1967 and 1974), it is clear that the 25 percent in per capita own source revenues has not been sufficient to allow for an increase in real levels of service provided to District residents. Moreover, such high rates of price increase greatly reduce the expansion of services that could be financed out of even the 92 percent increase in per capita revenues from all sources. Perhaps it is the pressure implied by such rapid price increases which underlies the force for continued tax rate increases. Turning attention to the components of the tax system, it is clear that taxes on property, personal income, and sales are among the major elements of the District's revenue system (Table 2). These, along with the major business taxes, account for a full fifty-eight percent of District's 1975 General Fund revenues. Among these taxes, it is the property tax which stands out. In 1970, it was by far the single most important source of locally raised revenues. Between 1970 and 1975, however, property tax revenues increased by only about fifteen percent while the revenues of virtually every other tax increased about three times as much. In particular, revenues from the personal income tax increased to such an extent, 72 percent, that in 1975 it had surpassed the property tax as the principal source of District tax revenues.[4]

TABLE 2.—GROWTH IN SELECTED TAX REVENUES AND TOTAL OWN SOURCE REVENUES, 1970–75, AND SELECTED TAX REVENUES AS A PERCENT OF GENERAL FUND TAX REVENUES

[Dollar amounts in thousands]

	1970	1975	Percent increase	Percent of general fund revenues (1975)
Real property tax	$113,896	$130,956	14.98	13.71
Individual income tax	83,043	142,863	72.03	14.96
Corporate and unincorporated business franchise tax	20,818	29,792	43.11	3.12
Financial institution public utilities tax	15,553	29,591	90.26	3.10
Insurance tax	5,339	8,510	59.39	.89
Sales tax	71,333	113,684	59.37	11.90
Other own source revenues	78,560	98,825	25.80	10.35
Total own source revenues	388,542	554,222	42.64	58.03

Source: "Financial Report Fiscal Year 1975," District of Columbia, October 1975, p. 27

[3] Greytak, David and Bernard Jump, "The Effects of Inflation on State and Local Government Finances," 1967–1974, Occasional Paper No. 25 (Syracuse, New York: Metropolitan Studies Program, Syracuse University, 1975); and Greytak, David, and Bernard Jump, "Inflation and Local Government Expenditures and Revenues: Method and Case Studies," Public Finance Quarterly, forthcoming.

[4] For an historic account of revenue yields and changes in the tax structure, see D.C. Tax Facts, Fiscal Year 1976, Government of the District of Columbia, Department of Finance and Revenue, Fiscal Planning and Research, Washington, D.C., February 1976.

One often overlooked factor, which undoubtedly has contributed to the growth in tax revenues, is inflation. This is most obvious in the case of the sales tax, where—other things being constant—price increase leads directly to an increased tax base. The case is similar for the personal income tax, for surely the incomes of employees, and therefore the personal income tax base, have increased more rapidly because of inflation. Form the standpoint of tax revenue generation during inflation, taxes imposed on bases which are defined in monetary terms are the best kind.[5] To the extent that inflation increases the nominal values of such tax bases, tax revenues will automatically increase. The extent to which inflation has been a factor in the growth of the District's tax revenue is unknown. Thus, one cannot guess whether the inflation-generated revenue increases were sufficient to compensate for the increased prices which the District had to pay. However, it has been estimated that, for state and local governments generally, as well as for a few areas which have been studied closely, inflation has increased the costs of goods and services purchased by government more than it has increased its revenues.

THE ECONOMIC BASE

While the impact of inflation must be acknowledged, it would be a mistake to ignore the role of the District's economic case in the expansion of tax revenues. Overall, the total number of jobs in the District grew at a rate of about one percent per year. While this growth could be taken as an indication that the District retains its vitality as an employment center, the total picture is not clearly reflected by the aggregate statistics. More specifically, even a cursory glance at the performance of the District's various employment sectors reveals substantial changes in the composition of activities within the District.

First and foremost is the importance of government as an employer. What stands out is not that the government accounts for roughly 45 percent of all jobs in the District (Table 3), for in the nation's capital this is axiomatic. Rather, it is the dominance of government in the growth of employment which is striking. Indeed, additions to government employment alone account for virtually the total employment increment during the early part of the decade. The corollary to this, of course, that, at least in terms of employment, the importance of the private sector in the District's economy is diminishing. Of the various classifications of private sector, employment declined in all except the service and construction employment sectors. The pattern of increasing specialization in government and service activities is generally consistent with the trends in most of the nation's big cities. However, in Washington, the situation is much more pronounced than in other large cities.

In addition to the changing structure of employment, another aspect of the District's experience is common to big cities; that is, the growth of suburban areas as employment locations and the attendant decline of the role of the District as an employment location. Decentralization

[5] Ibid.

TABLE 3.—WASHINGTON, D.C., EMPLOYMENT AND EMPLOYMENT CHANGE BY EMPLOYMENT CLASS, 1970–75, AND DISTRICT EMPLOYMENT AS A PERCENT OF METROPOLITAN AREA EMPLOYMENT

Employment class	Washington, D.C., employment (thousands)		Percent change	Washington, D.C., employment as a percent of metropolitan employment	
	1970	1975		1970	1975
Construction	19.5	20.4	4.62	28.1	28.5
Manufacturing	18.6	15.1	−18.82	41.0	32.3
TCPU [1]	30.7	28.6	−6.84	50.5	44.7
Trade [2]	79.9	64.8	−18.90	34.9	25.7
FIRE [3]	33.3	33.0	−.9	48.8	42.3
Services [4]	135.6	145.7	7.45	53.5	47.7
Government [5]	231.7	270.0	16.53	50.8	52.7
Total	549.3	577.6	5.15	46.5	43.4

[1] Transportation, communications, and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance, and real estate.
[4] Includes mining.
[5] Includes Federal military, Federal civilian, and District employees.

Source: "Nonagricultural Employment, Washington, D.C.," District of Columbia Manpower Administration in cooperation with the Bureau of Labor Stastistics/U.S. Department of Labor, 1975; "Nonagricultural Employment, Manufacturing Hours and Earnings, Washington, Metropolitan Area" District of Columbia Manpower Administration in cooperation with the Bureau of Labor Statistics, U.S. Department of Labor, July 1975.

in the Washington area has been an ongoing process. In 1970, employment in the District's major employment sectors was roughly evenly divided between the District and its suburbs (Table 3). By the middle of the decade, the suburbs accounted for the majority of employment in all sectors with the exception of government, which appears to be growing more rapidly in the District than in the suburbs.

What emerges from this brief review is a pattern of the growing dominance of the government sector as an employer in the District. Employment, of course, is only one measure of economic performance. Another, which has been particularly important because of its relation to tax bases, is income. Overall income earned in the District between 1971 and 1975 increased substantially—thirty-six percent (Table 4). With income, as was the case with employment, growth in the government sector was greater (although not much greater) than that in the private sector: 39 and 32 percent, respectively. However, within both the public and private sectors, wide differences in the rate of income growth occurred. In fact, income earned in a number of the private sectors—most notably in the service, finance, and public utilities sectors—grew more rapidly than in the public sector.

While growth in earned income in the private sector may imply strength in bases of above taxes related directly to business activity, no such conclusion is warranted with regard to those taxes related to employees, i.e., the taxes on personal income, sales, and residential property, for a substantial and increasing proportion of income earned in the District accrues to residents outside the District.[6] In fact, net labor and proprietors income received by District residents increased by only twenty-eight percent. Still, personal income received by District residents did increase by thirty-seven percent. This, however,

[6] For a comparison of local income and commuter earnings taxes, see ACIR, *Ibid.*, pg. 230.

TABLE 4.—PERSONAL INCOME BY MAJOR SOURCES, AND BY PLACE OF RESIDENCE, 1971–75, AND PERCENT INCREASE IN PERSONAL INCOME, 1971–75, BY MAJOR SOURCES AND PLACE OF RESIDENCE, DISTRICT OF COLUMBIA

[Dollar amounts in millions]

	1971	1972	1973	1974	1975	Percent increase, 1971–75
Total labor and proprietors income earned in Washington, D.C.	$6,440	$6,988	$7,524	$8,168	$8,746	36
Income by industry:						
Private	2,937	3,143	3,398	3,719	3,880	32
Manufacturing	206	217	223	246	248	20
Mining	----	1	1	2	3	----
Contract construction	206	242	278	336	294	43
Trade [1]	583	594	606	622	631	8
FIRE [2]	293	311	325	346	366	25
TCPU [3]	356	395	434	494	517	45
Services	1,258	1,347	1,489	1,622	1,770	41
Other	34	----	43	47	51	50
Government	3,503	3,845	4,126	4,449	4,867	39
Net labor and proprietors income earned in the District which accrues to non-District residents [4]	3,410	3,367	4,013	4,437	4,796	41
Net labor and proprietors income received by District residents [4]	2,697	2,952	3,093	3,267	3,458	28
Personal income received by District residents [5]	4,033	4,455	4,712	5,076	5,544	37

[1] Wholesale and retail trade.
[2] Fire insurance and real estate.
[3] Transportation, communication, and public utilities.
[4] Net labor and proprietors income received equals labor and proprietors income minus personal contributions for social security.
[5] Personal income equals net labor and proprietors income plus dividends, interest, rents, and transfer payments.

Source: "Survey of Current Business," U.S. Department of Commerce, Bureau of Economic Analysis, August 1976, p. 19 and August 1974, p. 35.

reflects a growing dependence of District residents on nonlabor sources of income. In particular, transfer payment (not shown separately in Table 4) increased by seventy-five percent from $721 million in 1971 to $1,262 million in 1975 and, in 1975 accounted for fully twenty-two percent of personal income received by District residents.[7]

The fact that a major proportion of the income earned in the District accrues to nondistrict residents reflects, to a great extent, the prevalence of suburbanites among those employed in the District (Table 5): two out of every three people working in the District live in the suburbs. Moreover, although suburbanites account for a larger proportion of District workers in some activities—government, manufacturing, and construction—than in others—service, trade, and finance—in every sector, the work force is composed primarily of incommuters.

Beyond the obvious impact of commuting patterns lies another important factor affecting the relation of income generated to income received in the District: in every sector, the wages and salaries of incommuters are substantially higher than those received by people who both live and work in the District. In fact, the wage of the average commuter is about 30 percent greater than that of the noncommuter—$14,833 and $11,355 respectively. Moreover, what is true of the whole is true of the part: the average wage and salaries of suburban incom-

[7] Survey of Current Business. U.S. Department of Commerce, Bureau of Economic Analysis, August 1974, pg. 19 and August 1975, pg. 35.

TABLE 5.—EMPLOYMENT AND AVERAGE WAGES BY EMPLOYMENT CLASS, TOTAL DISTRICT EMPLOYMENT, NONCOMMUTERS, AND INCOMMUTERS, WASHINGTON, D.C.: 1975

[Employment in thousands]

	Total employment	Average wage	Resident employment	Average wage	Incommuter employment	Average wage
Agriculture	0.2	$9,785	0.1	$4,697	0.1	$14,872
Mining	.1	22,094	0	----------	.1	22,094
Construction	20.4	12,422	5.1	9,932	15.3	13,252
Manufacturing	15.1	13,350	4.1	11,683	11.0	13,971
TCPU [1]	28.6	13,653	8.2	10,657	20.4	14,858
Trade [2]	64.8	18,551	27.4	6,317	37.4	10,189
FIRE [3]	33.0	10,301	12.4	7,821	20.6	11,794
Services	145.7	9,752	55.9	8,214	89.8	10,709
Government [4]	250.1	17,918	68.2	16,778	181.9	18,346
Total	558.0	13,702	181.4	11,355	376.6	14,833

[1] Transportation, communication, and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance, and real estate.
[4] Includes Federal, civilian, and District employees.

Source: Bureau of Economic Analysis, Department of Commerce, "Commuting Flows by County: Washington, D.C., 1975," special unpublished tabulations of preliminary data; and "Nonagricultural Employment, Washington, D.C.," Manpower Administration in cooperation with the Bureau of Labor Statistics/U.S. Department of Labor, 1975.

muters exceed those of District residents working in the District in every major employment category by at least $1,500.

From the point of view of the District's tax system, the dominance of suburbanites in the District's work force and the increased share of income generated in the District accruing to non-district residents has importance simply because incomes earned in the District by nonresidents, unlike those of District residents, are not subject to the District's personal income tax. In this respect the District differs from most other cities which have enacted local income taxes.[8]

SUMMARY

What emerges from this brief overview is a pattern with implications for the District's fiscal future which could be considered comfortable only by the more sanguine and imaginative of observers. In particular, the growing dominance of the public sector in itself need not necessarily be a concern and, in fact, is perhaps the natural state of affairs in the nation's capital. Indeed, if the growth in the government sector, there would need be little, if any, concern with the imbalance between the public and private sectors. Such has not been the case; the private sector in the District is in absolute decline. As the suburban shares of private sector employment are increasing, it would be difficult to argue that the decline in the District's private sector reflects an area-wide trend. Nonetheless, because of the growth in government, total employment in the District has been on the rise. From the point of view of the District's revenue raising system, this may not be sufficient, as a substantial proportion of the District tax revenues are directly related to the activities of the private sector.

Alternatively, the income generated by the private sector, as well as that derived from government, has grown; and this, no doubt, has been reflected in those taxes related to individuals as well as those related to business. However, it would probably be a mistake to conclude that the increased income being generated in the District will have a sub-

[8] For comparison of local income and commuter earnings taxes, see ACIR, Ibid., pg. 230.

stantial effect on the revenues derived from the taxes on sales, personal income, or residential property. Given that in commuters amount for such a large proportion (67 percent) of the District's workforce and that their income is not taxed by the District, suburban governments are more likely to be the major beneficiaries of the growth in income generated in the District.

II. Tax Revenue and Economic Structure

The revenue yields of the four principal forms of taxation in the District are considered here in terms of the existing tax structure and in terms of (a) the replacement of the current property tax with a tax on land values only, and (b) the imposition of taxes on commuter income. The objective here is to assay the implications of changes in the District's economic composition for the revenue growth of these alternative tax structures. The focus is on the variation in the relation of tax revenue to activity among the major sectors of the District's economy and on the revenue implications of changes in the relative importance of these sectors.

In general, the relation between revenues and employment is established as a measure of the level of tax collections per unit of economic activity. There are a number of reasons for choosing the employment base as a gage of the level of economic activity in a sector. First, in terms of employment, place of work data are collected and reported in an industry bases, and in a form which is more consistent, comprehensive, and detailed than other measures such as income data. Second, the principally used measure in virtually all analyses of core city decline is employment loss.[9] Third, employment is the measure most commonly applied in analyses of urban structure and urban economic base changes.[10] Its use here, therefore, allows a comparison with other studies of the changing composition of the urban economy. Finally, labor and capital are the primary mobile inputs in the productive process in urban areas and, of the two, at least measurement ease would dictate the choice of the employment unit. For these reasons, and given the goal of this analysis—to estimate the revenue response to a changing economic base—the employment unit seems particularly appropriate.

It is important to note that, in relation to levels of business activities which take place in the District, the income and sales taxes and the tax on residential property differ from the taxes imposed on business in an important way. This is, while business tax revenues are closely related to business aggregates such as business income, gross premiums, and the value of taxable business property, such is not the case with the revenues of the income and sales taxes. For, although the aggregate levels of business and government activities are closely related to income earned and through income to the consumption and housing expenditures of persons employed in the District, District revenues from the taxation of personal income, sales, and residential

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[9] See, for example, Hoover, Edgar M., and Raymond Vernon, (1959) *Anatomy of a Metropolis*, Cambridge, Mass.: Harvard University Press; Bahl, Roy W., Alan K. Campbell, and David Greytak, *Taxes, Expenditures, and the Economic Base: A case Study of New York City*, Praeger Publishers, New York, 1974.

[10] See Tiebout, Charles M., *The Community Economic Base Study*, CED Supplementary Paper No. 16, New York: Committee for Economic Development, 1962.

property are related to residential locations of those employed in the District as well. More specifically, of the personal income earned by persons employed in the District, only that which is received by District residents is taxed by the District.[11] The case of the property tax is similar. While housing values are closely related to incomes, revenues derived from the taxation of property occupied by persons employed in the District accrue to the municipality in which they live.[12] Like the property tax, revenues from the taxation of sales accrue to the taxing jurisdiction in which the sales take place rather than that in which consumers earn their income. As consumers tend to shop in proximity to their homes, the relation between District sales taxes and income earned in the District, while quite close for residents of the District, is much less specific for suburban incommuters.[13] Thus, in relation to the personal income tax, the tax on residential property, and the sales tax, the factor which intervenes in the relation between income earned in the District and District tax revenues is the residential location of those holding jobs in the District.

Overall, two of every three people working in the District live in the suburbs (see Table 5). Similarly, among the employment sectors, only in the relatively small agriculture sector (2000 employees) do as many as half the employees reside within the District. Moreover, there is a close relation between income and commuting patterns. Among the sectors of the economy, the higher the average wage rate, the larger the proportion of employees who are incommuters. This type of wage rate differential is also characteristic within each sector: the average wages of commuters are generally $2,000–$3,000 higher than those of residents.

In terms of the relation between tax revenue yields and employment, the fact that such large proportions of the employees in all sectors are incommuters implies that substantial amounts of the income earned in the District and of residential property owned by persons employed in the District, as well as their retail purchases, are not subject to taxation by the District. No doubt per employee revenue yields to the District would be greater if smaller proportions of those working in the District lived in the suburbs.

In the paragraphs below, the tax revenue-employment relationship will be discussed for each of the four principal forms of taxation (property, business, personal income and sales). Unlike other inquiries into the questions posed in this analysis, the findings do not rely exclusively on inferences from aggregate data. Therefore, specific conclusions may be derived about the relative fiscal effects of growth and decline in particular sectors.[14] Moreover, the approach taken here, disaggregated as it is by type of tax as well as by economic sector,

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[11] Strictly, all income earned in the District by the self-employed is subject to the unincorporated business income tax.

[12] For a summary of the evidence on the relation between income and housing values, see DeLeeuw, Frank. "The Demand for Housing: A Review of Cross-Section Evidence." Review of Economics and Statistics. Vol. 53, February 1971, pp. 1–10.

[13] The relation between the shopping behavior of residents of the District's suburbs and District sales tax revenues has been studied by K. V. Greene, W. R. Neenan, and C. D. Scott, "Fiscal Interactions in a Metropolitan Area" (Lexington: D.C. Heath and Co.), 1974.

[14] The models and data used to establish these relationships are presented and discussed in the appendix. In these models, the revenue response to a shift of employment between industries depends on the assessment process, the rate and base structure of the various taxes, and interindustry differences in four factors: capital/labor ratios, the commuting patterns of employees, the income elasticity of employee demand for housing, and the income elasticity of demand for sales taxable goods and services.

allows an evaluation of the impact on revenue yields of changes in the tax structure in conjunction with changes in the economic structure.

The existing tax system

The variations in revenue yields per employee are given in Table 6.[15] Property tax yields per employee are highest in the agriculture, mining, and F.I.R.E. sectors. Alternatively, because of the 'onsite' nature of construction and the general tax-exempt status of government activities, revenue yields per employee in these sectors are low.[16] The case of the public utilities related sector, TCPU, is slightly different. In large part, per employee property tax revenues are low in this sector because tax revenues are derived from the public utilities sector primarily through a tax on gross receipts rather than on property. The government, of course, makes no direct contribution to business tax revenues. The major sector differences in the property tax revenues per employee are related to business property rather than the residential property occupied by employees. This reflects the fact that there are greater variations among the employment sectors in the amounts of taxable business property per employee than in residential property values per employee. Generally the variation in residential property tax revenues per employee can be traced to commuting patterns. That is, those sectors in which commuters account for the larger share of total employment (construction, manufacturing, and TCPU), the residential property tax revenues are low relative to employment. As is the rule with most generalizations, there is an exception, and in this case it is the government sector. Here revenues per employee are higher than would be expected on the basis of commuting patterns because the average incomes of government workers are so much higher than those of employees in other sectors (see Table 5).

Variations in the per-employee revenues derived from the business tax, can be explained partly by the particular tax treatment of specific sectors. This is particularly clear in the case of transportation, communication and public utilities (TCPU), and financial institutions, insurance, and real estate (FIRE) sectors, whose operations are subject to separate taxation. The government sector, of course, does not contribute directly to the business tax revenues. Finally, as the taxation of unincorporated business accounts for such a small proportion of business tax revenues, the remaining variation can be traced to the corporate franchise tax. In this case (Appendix Table A–5). variation in revenues per employee among the sectors arises out of differences in the proportion of employees employed in incorporated and unincorporated enterprises as well as differences in taxable income per employees.

Explanation of the difference in personal income tax yields per employee can be traced, in part, directly to income differences among the employees of the various sectors (see Appendix Table A–2). However, as the proportion of the total employee income generated by each

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[15] The finding reported here for Washington, D.C., corresponds generally to those of a similar study of New York City. Differences in per employee yields in the two cities can be attributed to interindustry differences in commuting patterns and incomes as well as tax structures. See Bahl-Graytak, "The Response of City Government Revenues to Changes in Employment Structure," *Land Economics*, November 1976, Vol. 52, No. 4.

[16] See Appendix for a discussion of the interindustry variation in revenues per employee by type of tax.

TABLE 6.—TOTAL TAX REVENUES PER EMPLOYEE BY EMPLOYMENT CLASS AND BY TYPE OF TAX, WASHINGTON, D.C.: 1975

	Real property tax		Personal income tax	Business taxes	Sales tax	Total
	Business	Residential				
Agriculture	$1,915	$69	$50	(1)	$103	$2,137
Mining	1,549			(1)	73	1,622
Construction	14	36	101	$87	81	319
Manufacturing	242	46	141	270	91	790
TCPU[2]	22	42	124	827	93	1,108
Trade[3]	307	59	86	89	77	616
FIRE[4]	2,056	52	104	568	85	2,865
Services	79	53	119	75	86	412
Government[5]	(6)	51	231	(6)	123	405
Average	187	51	164	122	102	626

[1] Not estimated.
[2] Transportation, communication, and public utilities.
[3] Wholesale and retail trade.
[4] Finance, insurance, and real estate.
[5] Includes Federal civilian and District employment.
[6] Not applicable.

Note: Columns and rows may not add to total due to rounding.

Source: Appendix, tables A-1, A-2, A-4 and A-5.

sector which is taxable by the District depends on the residential location of employees, the variation in revenue yields per employer are greatly affected by commuting patterns. Still, those sectors associated with higher per employee revenues (government, manufacturing and TCPU) are among those in which wage rates are relatively high. The case is similar in the trade sectors, where both the average wage and per employee income tax revenues are the lowest. Between the extremes, the role of commutation patterns is more evident. That is, relative to other sectors, per employee revenues in the FIRE and the service sectors are higher than would be anticipated on the basis of average wage rates because relatively larger proportions of the employees in these sectors reside in the District. The reverse is true in the case of construction: per employee revenues are lower than would be expected because such a larger proportion of employees (75 percent) are incommuters.

As would be expected given the nature of shopping behavior—most retail purchases occur in proximity of the buyer's residence—and the fact that only income received by District residents is taxed by the District, the pattern of intersector variation in sales tax revenues generally follows that of the income tax. The fact that the intersector variation in sales tax revenues per employee is less than that of the personal income tax is, in part, due to the difference in the structure of the taxes; the progressive nature of the income tax accentuates revenue differences due to income differences. Another factor serving to reduce the variation in the sales tax to the income tax is that although commuters make most of their retail purchase in the jurisdiction in which they live, they do purchase some sales taxable items in the District.

Moving beyond the peculiarities of specific taxes, a more general indication of the importance of industry structure can be found in the per employee levels of revenue derived from all four of the revenue sources considered above. In general, revenues per employee are highest

in those sectors which are subject to a specific type of business tax and/or whose activities are office-oriented—FIRE ($2,865), TCPU ($1,107), agriculture ($2,501), and mining ($1,622). Government activities, of course, are also concentrated in offices. However, as government buildings are exempted from property taxation and government activities are not subject to business taxes, the level of per employee revenues in the government sector ($405) is much below those of other sectors whose activities are office-related. The importance of the property and business taxes in determining intersector difference in per employee revenues is further underscored by construction and service sectors. Revenues per employee are the lowest in these sectors, $319 and $412 respectively, and these low levels can be traced directly to property taxation in the case of construction and to business taxation in the case of services.[17]

Given that tax revenues derived from the government sector are limited to those paid by employees (income, sales, and residential property taxes), the level of revenues per government employee is perhaps higher than might be anticipated. However, the high level of revenue per employee in the government sector can be traced directly to the high income level of government employees and their consequent large contribution to sales, income, and residential property tax revenues.

More generally, these findings indicate a potentially substantial response of tax revenues to change in the District's employment structure. Particularly important is the indication that of all the sectors, the tax revenues generated per employee are among the lowest in the two sectors—services and government—which account for fully 70 percent of employment in the District. Equally disturbing is the fact that the three sectors in which employment additions have occurred—construction, services, and government—revenue yields are the lowest, while in those sectors where revenue yields are high, the number of employees has declined.

The relatively low tax revenues per employee in the large and the growing employment sectors can be traced to the small amounts of taxable property and taxable business income relative to employment which characterize these sectors. In this regard, the government sector is at the extreme: government-owned property is generally tax-exempt, while the concept of the business income taxes is, by definition, not appropriate.[18] Alternatively, both construction and service activities are labor intensive. That is, relative to the other sectors of the private economy, services and constructions activities require small amounts of taxable property per employee. Moreover, being labor intensive, a large share of the income generated in these sectors appears as employee wage and salaries rather than as taxable business income. However, although the employer incomes account for larger shares of the income earned in the sectors, the average level of employee wages and

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[17] The low levels of business tax revenues per employee in the construction and service sectors are most likely to result of their labor-intensive nature.

[18] In 1975 the assessed value of Federal (District) government property amounted to $2,968 million ($316 million) or roughly 37.9 (4.0) percent of the total assessed value of property in the District. It should be noted that because of its special status as the seat of the National Government, the Federal Government makes a special contribution to the District government—the Federal payment. In 1975, the tax liabilities on federal government property would have been, if taxed, $98.5 million. This amounts to 43.6 percent of the federal payment. See Government of the District of Columbia, The Federal Payment Fiscal Year 1977, January, 1976, Table 1, p. 12 and Table 7, p. 24.

salaries is not high. Regretfully, in conjunction with the prevalence of incommuting, the low levels of wages and salary in the sectors do not generate personal income tax revenues sufficient to offset the low levels of business property and business income tax revenues per employee.

Alternative Tax Structures

Having explored the relation between economic activity and the revenues yielded by the tax structure, we now turn to a consideration of the yield.

LAND VALUE TAXATION

The first alteration to be considered is the replacement of the current property tax, which is levied on land and improvements, with one that is levied on land only. Since land values comprise only a part of the current tax base, the base of a land value tax is, of course, lower. In order to offset this shrinkage in the tax base, the tax rate applied to the value of taxable land only must be increased in order to preclude a reduction in property tax revenues. That is, the modification of the property tax involves an equal yield conversion from a land and improvements property tax to a land only tax. Thus, the overall property tax burden remains constant, at least at the time of conversion. What does change, however, is the distribution of the tax base among property uses. Those uses in which land as a proportion of combined land and improvement value is high will experience an increase in tax burden, while those in which the land proportion is relatively small will benefit from a reduction in tax burden.

The most notable effect of shifting from a property tax on land and improvements to a tax on land alone would be to increase the burden placed on nonresidential property by about five percent, and reduce that on residential property by about 15 percent (see Table 7). In terms of the residential component of the property tax, per employee revenues would be lower in all sectors. This implies that one immediate result of a shift to a land-only property tax would be to reduce the property tax burdens on residential housing.

With respect to the nonresidential component of the property tax, taxation of only land values would increase revenues per employee in two sectors: trade and services. Similarly, these increases in the trade and service sectors carry over the combined residential and nonresidential revenues. Thus, the per employee yields of an equal yield land value property tax system would be lower than the existing tax in every sector except trade and services. As has been indicated, of these two only in the service sector has employment been increasing. Whether the change in tax burdens implied by the shift to a land value only tax would be sufficient to alter the patterns of employment change is an interesting question; however, it is beyond the scope of this study.[19] More relevant to the purpose at hand are the revenue yield implications of these differences in per employee revenues given a continuation of past changes in the District's economic structure. This is a topic which will be considered at a later point.

[19] The analysis here is concerned only with the immediate impact of a shift to land value only property tax; whether the change in tax burdens which would result from such a shift would alter the pattern of industrial growth in the District is not at issue here.

TABLE 7.—RESIDENTIAL, NONRESIDENTIAL, AND TOTAL PROPERTY TAX REVENUES, CURRENT PROPERTY TAX AND CONSTANT YIELD LAND VALUE TAX REVENUES PER EMPLOYEE, WASHINGTON, D.C.: 1975

Employment class	Current property tax			Land value tax [1]		
	Residential	Nonresidential	Total	Residential	Nonresidential	Total
Agriculture	$69	$1,915	$1,984	$58	$1,827	$1,885
Mining		1,549	1,549		1,478	1,478
Construction	36	14	50	30	14	44
Manufacturing	46	242	288	38	236	274
TCPU [2]	42	22	66	35	21	56
Trade [3]	59	307	364	48	400	448
FIRE [4]	52	2,056	2,108	43	1,974	2,017
Services	53	79	132	44	90	134
Government [5]	51		51	42		42
Average	51	187	238	43	196	239

[1] Tax revenues calculated assuming land value only property tax of equal yield to the actual 1975 property tax.
[2] Transportation, communication, and public utilities.
[3] Wholesale and retail trade.
[4] Finance, insurance, and real estate.
[5] Includes Federal, civilian, and District employees.

Source: See text and appendix table A-1.

COMMUTER INCOME TAX

Currently, District taxation of income earned in the District is limited to the income received by District residents. Given that such a large proportion of the employees in all sectors reside beyond the District's limits, there can be no doubt that taxation of commuter earnings would greatly enhance District revenue. The magnitude of the revenue increase which may result from taxation of commuter earnings depends on the specifics of the definition of the commuter earnings tax base and the rates to be applied to the tax base.[20] For this analysis, the impact of a commuter earnings tax on per employee income tax revenues has been calculated for three different commuter earnings tax options.[21] The first, option 1, defines the tax base as wages and salaries earned by nonresidents in the District minus a deduction of $750. The tax rate is defined at each level of taxable income as one-third the tax rate applied to District residents with a comparable level of taxable income. The second option defines taxable income as income earned in the District by nonresidents minus a $6,500 deduction. Taxable income in this option would be taxed at the same rates applied to District residents. In the third option, taxable income is income earned in the District minus $6,500, and is taxed at a flat rate of 1.5 percent. In conjunction with the resident income tax, which yields on the average $164 per employee (Appendix Table A-2) the average yield from the taxation of resident and commuter would be substantial; i.e., $356 for Option 1, $479 for Option 2, and $254 for Option 3 (see Table 8).

Generally, the interindustry variations in revenues per employee conform to the differences in average wages and commutation patterns.

[20] In addition, the amount of revenue that would be generated by a commuter earnings tax also depends on the taxation by Maryland and Virginia of District residents working in these states. That is, in order to avoid double taxation, reciprocity arrangements will in some form permit taxpayers to credit income taxes paid to other State and local governments against their tax liabilities. The revenue gains net of these credits will be considered in the next section.

[21] The various structures represented by the three options of the commuter income tax were selected for analysis here because they reflect those most recently and/or most often proposed. For a discussion of the proposed commuter income taxes, see U.S. Congress. House Committee on the District of Columbia. Commuter Tax. *Hearings and Markup before the Subcommittee on Fiscal Affairs of the House Committee on the District of Columbia on H.R. 11579 and H.R. 14621*, 94th Congress, 2d session, 1976.

Revenue yields per employee are greater with Option 2, which has the most progressive rate structure. Yields per employee are lowest when the tax is imposd at a flat rate, Option 3.

Under all three options, revenue yields per employee would be highest in the government sector. As the government sector is the major employer in the District and as it has been the major growth sector, it would seem that the initiation of a commuter tax of any of the three types considered here would greatly enhance the District's revenue prospects. Revenues per employee in the other large and growing employment sector, services, are relatively low. This, of course, would imply that revenue growth due to increases in service sector employment will be moderate unless employee increases are substantial. Alternatively, revenues per employee revenues in the trade sector are experience growth in the government and services sectors and substantial employment losses in the trade sector, the prospects for growth in resident and commuter income tax revenues would seem promising.

TABLE 8.—RESIDENT INDIVIDUAL INCOME AND COMMUTER EARNINGS TAX REVENUES PER EMPLOYEE BY EMPLOYMENT CLASS AND BY TYPE OF COMMUTER TAX, WASHINGTON, D.C.: 1975

	Tax revenues		
	Option 1	Option 2	Option 3
Agriculture	$187	$248	$113
Mining	480	938	234
Construction	282	372	184
Manufacturing	331	441	229
TCPU [1]	322	429	215
Trade [2]	185	219	128
FIRE [3]	233	283	160
Services	234	289	170
Government [4]	500	696	360
Average	356	479	254

[1] Transportation, communication, and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance, and real estate.
[4] Includes Federal civilian and District employees.

Source: Appendix tables A-2 and A-3.

III. Revenue Response of Alternative Tax Structures To Employment Changes

The data presented in Section II identifies the interindustry variations in the levels of revenues per employee which can be associated with alternative tax structures in Washington, D.C. Five alternate tax structures have been considered. The first is the tax structure as it existed in 1975, and the remaining four represent specific modifications to that tax structure. The first of these modifications is the substitution of a property tax levied on land values only for the current tax levied on land and capital. The remaining three modifications involve the addition of a commuter income tax in which the tax base and rates are defined as income earned by nonresidents in the District with (1) allowance of a $750 deduction and tax rates equal to one-third those of the resident income tax; (2) allowance of $6,500 standard deduction, with tax rates equal to those of the resident income tax; and (3) allowance of a $6,500 deduction with a 1.5 percent tax rate.

INTERINDUSTRY REVENUE DIFFERENCE

The data in table 9 show the interindustry variation in total tax revenues per employee for each sector. As has been indicated above, the finding that per employee tax yields of the existing system are lowest in the government, service and construction sectors is of particular interest. These low per employee yields are of concern, not because there are the major sectors of employment, although that is the case with the government and service sectors. Rather this finding is important because only these sectors experienced any employment growth between 1970 and 1975.

TABLE 9.—TOTAL TAX YIELDS PER EMPLOYEE OF ALTERNATIVE TAX STRUCTURES, WASHINGTON, D.C.: 1975

COMMUTER INCOME TAX [1]

Employment [2]	Existing tax structure	Land value	Option 1	Option 2	Option 3
Construction	$319	$313	$500	$590	$402
Manufacturing	790	776	978	1,088	876
TCPU [3]	1,107	1,097	1,302	1,409	1,195
Trade [4]	616	700	708	742	651
FIRE [5]	2,865	2,774	2,985	3,035	2,911
Services	412	414	523	578	459
Government [6]	405	396	674	870	534

[1] As it is generally presumed that the tax on unincorporated businesses would be eliminated if a commuter income tax were enacted, its revenues are not included in the total.
[2] Data deficiencies preclude the estimation of all revenues derived from the agriculture and mining sectors. Therefore, they have not been included here.
[3] Transportation, construction, and public utilities.
[4] Wholesale and retail trade.
[5] Finance, insurance, and real estate.
[6] Includes Federal, civilian, and District employees.

Source: Tables 6, 7, and 8.

Equally important, in the sectors in which revenue yields are the highest (TCPU and FIRE), employment has declined, although the losses in these sectors have not been extreme. Alternatively, per employee revenues in the trade sector which has been in greatest decline, while not the largest, are substantially greater than those of the service and government sectors.

With regard to alterations in the tax system, the land value tax is of particular interest in that its initial efforts are to redistribute tax liabilities rather than to increase tax revenues.[22] Overall, the extent to which the changes in the distribution of tax liabilities among sectors alter revenue yields per employee cannot be considered anything but minor. Still, the shift would reduce (relative to the current system) per employee tax yield in all but two sectors. Two of the sectors in which revenue per employee would be lower have been the source of employment growth—government and construction. On this account, it would seem that the shift to a land value tax would dampen the prospects for future revenue growth. Alternatively, revenues per employee in three of the four declining employment sectors (manufacturing, TCPU and FIRE) would be lower with a land value only tax. This would seem to bid well for future revenues, for, if these sectors

[22] The reader should note that the considerations here are limited to the initial effects of the shift from a land and structure to a land value only property tax. Secondary repercussions, such as the renewal and/or replacement of existing structures, which are often alleged to follow the initiation of the land value only tax are beyond the scope of this discussion.

continue to decline, revenue losses would be less than those attendant to the existing tax structure.

Beyond this, it is quite clear that a shift to a land value only property tax would increase the level of revenues per employer derived from the trade sector. As this sector has experienced the largest employment losses, it would seem that in this case the shift to a land value only tax would have negative effects on the District's revenue prospects. Still, here, as is the case in all private sectors of employment, a tax on land values only would reduce per employee revenues derived from the taxation of business property while increasing those on residential property (see Appendix Table 7). Whether these reductions in the tax liabilities would be sufficient to stem the recent trend and/or stimulate an upswing in the declining employment sectors cannot be answered by this analysis.

Nonetheless, given the recent trends in employment, it would seem safe to say that the imposition of a land value only property tax would, in the years immediately following it, result in lower aggregate tax revenues than would be associated with the existing tax system.

Turning to the commuter income tax, revenues per employee in every case would be increased with all three options. Among the three options the greatest increase would be derived from that with the most progressive rate structure—option 2—and the least from the flat rate option—number 3. As was the case with the land value tax, the initiation of a commuter tax—at least of the varieties considered here—would not alter the relative pattern of per employee revenues among the employment sectors. That is, revenue per employee in the growing sectors would still be the lowest while those in the sector which experienced the largest employment decline, FIRE, would be the highest.[23]

REPLACEMENT REQUIREMENTS

The implications of the differences in revenue yields per employee for the District's revenues may be developed in terms of intersectoral job tradeoffs allowable if revenues are to be held constant. The coefficients are given for the existing tax system in Table 10, for the existing tax system with the property tax applied to land values only, Table 11, and for the tax system with each of the three variants of the commuter income tax, Tables 12–14.[24]

The replacement requirements necessary to maintain a constant level of tax revenues underscore the vulnerability of District Tax revenues to the changes which are occurring in the composition of its economy. For example, maintaining a constant level of revenues from the current tax system (Table 10) would require that the government sector add roughly 19 new employees for every 10 lost in manufacturing, and about 15 for every 10 lost in trade. Similarly, the services would have to add about 19 employees for every 10 jobs lost in manufacturing, and 15 for every 10 lost in the trade sector. In fact, with any of the alternative tax structures, the replacement requirements are similar. The sectors which can be replaced most easily—construction, services and government—or, alternatively, those which require the largest employ-

[23] As was noted in the previous section, a tax on commuter incomes of any variety, unlike the shift to a land value only tax, would yield substantial new revenues upon initiation.

[24] The model and assumption underlying the calculations of the replacement requirement are discussed in the Appendix.

ment increments to offset jobs lost in other sectors are the growing sectors. The most difficult to replace is FIRE, the sector which has experienced the largest employment loss.

TABLE 10.—HYPOTHETICAL EMPLOYMENT REPLACEMENT REQUIREMENTS NECESSARY TO MAINTAIN A CONSTANT LEVEL OF TAX REVENUES; WASHINGTON, D.C.: 1975

PRESENT TAX SYSTEM[1]

Replacing industry	Construction	Manufacturing	TCPU	Trade	FIRE	Services	Government
Construction	1.00	2.48	3.47	1.93	8.98	1.29	1.27
Manufacturing	.40	1.00	1.40	.78	3.63	.52	.51
TCPU[2]	.29	.71	1.00	.56	2.59	.37	.37
Trade[3]	.52	1.28	1.80	1.00	4.65	.67	.66
FIRE[4]	.11	.28	.39	.22	1.00	.14	.14
Services	.77	1.92	2.69	1.50	6.95	1.00	.98
Government[5]	.79	1.95	2.73	1.52	7.07	1.02	1.00

[1] Includes property, sales, personal income, insurance, financial institutions, public utilities, and corporation and unincorporated business taxes.
[2] Transportation, communication, and public utilities.
[3] Wholesale and retail trade.
[4] Finance, insurance, and real estate.
[5] Includes Federal, civilian, and District employees.

Source: Table 9.

In the recent past, it has been the growth in the government and service sectors which has offset the employment declines in other sectors. The employment replacement coefficients indicate that, in order to just maintain a constant level of tax revenues, a continuation of recent changes in the structure of employment—out of the manufacturing and trade sectors and into government and the services—will require a substantial employment increase.

The requirements—substantial employment increases in the government and service sectors—if revenues are to remain constant, would only be slightly different if the property tax were levied only on land values (Table 11). Generally, the shift to a land value tax would slightly reduce the replacement requirements placed on the government and service sectors. However, there is one exception to the reduction in replacement requirements, and it is an important one. That is, with a tax on land values only, job losses in the trade sector become more difficult to replace.[25] As the trade sector is one in which major loss of employment has occurred, it would appear that the adaption of a land value only tax would not augur well for revenue growth.

[25] The case is similar with construction, whose replacement, with a land value tax, would require a slightly larger number of government workers.

TABLE 11.—HYPOTHETICAL EMPLOYMENT REPLACEMENT REQUIREMENTS NECESSARY TO MAINTAIN A CONSTANT LEVEL OF TAX REVENUES; WASHINGTON, D.C.: 1975

PRESENT TAX SYSTEM WITH PROPERTY TAX LEVIED ON LAND VALUES ONLY

Replacing industry	Construction	Manufacturing	TCPU	Trade	FIRE	Services	Government
Construction	1.00	2.48	3.50	2.24	8.86	1.32	1.27
Manufacturing	.49	1.00	1.41	.90	3.57	.53	.51
TCPU [1]	.29	.71	1.00	.64	2.53	.38	.36
Trade [2]	.45	1.11	1.57	1.00	3.96	.59	.57
FIRE [3]	.11	.28	.40	.25	1.00	.15	.14
Services	.76	1.87	2.65	1.69	6.70	1.00	.96
Government [4]	.79	1.96	2.77	1.77	7.01	1.05	1.00

[1] Transportation, communication, and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance, and real estate.
[4] Includes Federal, civilian, and District employees.

Source: Table 9.

TABLE 12.—HYPOTHETICAL EMPLOYMENT REPLACEMENT REQUIREMENTS NECESSARY TO MAINTAIN A CONSTANT LEVEL OF TAX REVENUES; WASHINGTON, D.C.: 1975

PRESENT TAX SYSTEM WITH COMMUTER INCOME TAX OPTION 1

Replacing industry	Construction	Manufacturing	TCPU	Trade	FIRE	Services	Government
Construction	1.00	1.96	2.60	1.42	5.97	1.05	1.35
Manufacturing	.51	1.00	1.33	.72	3.05	.53	.69
TCPU [1]	.38	.75	1.00	.54	2.29	.40	.52
Trade [2]	.71	1.38	1.84	1.00	4.22	.74	.95
FIRE [3]	.17	.33	.44	.24	1.00	.17	.23
Services	.96	1.87	2.49	1.35	5.71	1.00	1.29
Government [4]	.74	1.45	1.93	1.05	4.43	.78	1.00

[1] Transportation, communication, and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance, and real estate.
[4] Includes Federal, civilian, and District employees.

Source: Table 9.

TABLE 13.—HYPOTHETICAL EMPLOYMENT REPLACEMENT REQUIREMENTS NECESSARY TO MAINTAIN A CONSTANT LEVEL OF TAX REVENUES; WASHINGTON, D.C.: 1975

PRESENT TAX SYSTEM WITH COMMUTER INCOME TAX OPTION 2

Replacing industry	Construction	Manufacturing	TCPU	Trade	FIRE	Services	Government
Construction	1.00	1.84	2.39	1.26	5.14	0.98	1.47
Manufacturing	.54	1.00	1.30	.68	2.79	53	.80
TCPU [1]	.42	.77	1.00	.53	2.15	.41	.62
Trade [2]	.80	1.47	1.90	1.00	4.09	.78	1.17
FIRE [3]	.19	.36	.46	.24	1.00	.19	.29
Services	1.02	1.88	2.44	1.28	5.25	1.00	1.51
Government [4]	68	1.25	1.62	.85	3.49	.66	1.00

[1] Transportation, communication, and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance, and real estate.
[4] Includes Federal, civilian, and District employees.

Source: Table 9.

TABLE 14.—HYPOTHETICAL EMPLOYMENT REPLACEMENT REQUIREMENTS NECESSARY TO MAINTAIN A CONSTANT LEVEL OF TAX REVENUES; WASHINGTON, D.C.: 1975

PRESENT TAX SYSTEM WITH COMMUTER INCOME TAX OPTION 3

Replacing industry	Construction	Manufacturing	TCPU	Trade	FIRE	Services	Government
Construction	1.00	2.18	2.97	1.62	7.24	1.14	1.33
Manufacturing	.46	1.00	1.36	.74	3.32	.52	.61
TCPU [1]	.34	.73	1.00	.54	2.44	.38	.45
Trade [2]	.62	1.35	1.84	1.00	4.47	.71	.82
FIRE [3]	.14	.30	.41	.22	1.00	.16	.18
Services	.88	1.91	2.60	1.42	6.34	1.00	1.16
Government [4]	.75	1.64	2.24	1.22	5.45	.86	1.00

[1] Transportation, communication, and public utilities.
[2] Wholesale and retail.
[3] Finance, insurance, and real estate.
[4] Includes Federal, civilian, and District employees.

Source: Table 9.

The situation is difficult in the case of the commuter income tax. Generally, the replacement coefficients indicate that the growth requirements placed on the service and government sectors would be much lower if a commuter earnings tax were a part of the District's tax structure. Of the three commuter tax options, option 2—commuter earnings, minus a $6,500 deduction, taxed at the same rates at resident income—greatly reduces the replacement requirements imposed on the government sector. This is not the case with the service sector, where it is option 1—commuter earnings minus a $750 deduction taxed at one-third the resident rates—which generally requires fewer employees to replace employees in high wage sectors (construction, manufacturing and government). Alternatively, under option 2, the replacement requirements placed on the services by the sectors with relatively low average wages are lower.

From the point of view taken here, option 3, which perhaps stands the greatest chance for adoption, would be the least appealing. For, while the replacement requirements placed on the service and government sectors would be lower than with the current tax structure, these reductions are not as great as those associated with either option 1 or 2.[26]

REVENUE IMPLICATIONS

The data presented in the previous sections identifies the interindustry variation in the levels of revenues per employee which can be associated with the existing and four alternative tax structures in Washington, D.C. These results may be used to explore the revenue implications of the alternative tax structure to changes in the com-

[26] It is worth noting that the replacement coefficients are calculated on the assumption of constant wage rates. If, as would seem likely, wages in expanding sectors increase relative to those in declining sectors, then the replacement coefficients for services and government would be lower. Moreover, these requirements would be even lower where the tax is progressive—options 1 and 2.

position of employment in the District.[27] As the alternatives investigated involve separate modification to the existing structure, the consideration here turns first to the existing tax structure.[28]

THE CURRENT TAX STRUCTURE

A continuation of the employment trends established in the early 1970's would produce, between 1975 and 1979, an increase in employment of roughly six and one-half percent, or approximately 37,000 new employees.[29] The growth in revenues attributable to this employment increase would be $13.571 million (constant 1975 dollars), which amounts to an increase of only 2.98 percent (Table 15).[30] This figure results from an almost exact balancing of the positive/negative revenue effects generated by the private sectors and the revenue growth attributable in the government sector, which alone accounts for almost the whole of the revenue increase. Clearly, if the growth in government employment during the latter part of the seventies does not match that which occurred during the early part of the decade, the prospects for revenue growth in District revenues are bleak.[31]

No doubt the revenue response would be more favorable if the private sector as a whole were not in decline. Similarly, revenue prospects would be brighter if the growth in the private sector were in activities, such as finance, insurance, and real estate, which yield substantial tax revenues per employee rather than in the sectors where such yields are low-construction and services. The implications of this analysis are that the District's tax structure is not very responsive to the type of change which has been occurring in the District's economic structure.[32]

Given the nature of the tax system, this should be no surprise, for roughly a third of all tax revenues are derived directly from taxation of private business.[33] Indeed, in response to the changing employment structure, positive contributions to revenue growth come from only those taxes related to individuals—personal income and sales—while the response of those most closely related to business activities—the business taxes and the property tax—is negative.

With continuing declines in the District's private sectors and increasing concentration of employment in the government and service sectors, differences among employment sectors in revenues per em-

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[27] Elsewhere the response of the District's resident income tax and a commuter tax to changes in the interindustry structure of employment and the residential composition of employees over the period 1970–75 has been considered. The principal findings of that analysis were that (1) the changing interindustry structure of employment had favorable effects on resident income tax revenues but that (2) the revenue loss due to the shift to suburban residences by those working in the District was greater than the revenue growth due to employment increases, and that (3) a commuter income tax enhanced the revenue productivity of the changing structure of employment. See Greytak, David and Edward M. Cupoli, "Changes in Central City Employment, Residential Decentralization and Personal Income Tax Revenues," paper prepared for Presentation at the Meeting of the Northeast Regional Science Association, May 28, 1977.

[28] The model and assumption underlying the analysis which is to follow are presented in the Appendix.

[29] The changes in employment identified in Table 14 are estimated on the assumption that in each sector, employment changes in percentage amount are equal to those which occurred between 1970–74.

[30] Actually, this is the revenue growth attributable to the four taxes. If the remainder of the revenue system maintained a constant share of total receipts over the period, the total estimated increment would be $16.516 million.

[31] The reader is cautioned to consider these findings in light of the assumptions underlying the model from which they are derived.

[32] The implied elasticity of tax revenues to employment is approximately .46.

[33] This proportion is based on revenues derived from the direct business taxes, i.e., incorporated and unincorporated business, public utilities, insurance and financial institutions, and the property tax levied on nonresidential property.

TABLE 15.—ESTIMATED REVENUE RESPONSE TO CHANGES IN TOTAL EMPLOYMENT IN WASHINGTON D.C.: 1975–79

[In thousands of dollars and thousands of employees]

Employment class	Total tax revenue change per employee change	Total employment change	Total tax revenues
Construction	$319	5.73	$1,827.8
Manufacturing	790	−.163	−128.7
TCPU [1]	1,107	−1.210	−1,339.5
Trade [2]	616	−10.057	−6,195.2
FIRE [3]	2,865	−.006	−17.2
Services	412	11.496	4,736.4
Government [4]	405	36.265	14,687.3
Estimated revenue loss due to employment loss			−7,680.6
Estimated revenue gain due to employment increase			21,251.5
Estimated total change in tax revenues			13,570.9

[1] Transportation, communication, and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance, and real estate.
[4] Includes Federal, civilian, and District employees.

Note: Rows and columns may not add to totals due to rounding.

Source: "Nonagricultural Employment, Washington, D.C.," District of Columbia Manpower Administration in cooperation with the Bureau of Labor Statistics/U.S. Department of Labor, 1975: and table 9.

ployee could have marked effects on the District's fiscal position. The analysis here indicates that the existing tax system is not well structured to either avoid the loss of revenue implied by the decline in the private sectors or to capture the full revenue potential of the employment growth that is occurring. To avoid the depressing effect of private sector decline would require that the District rely to a greater extent on those taxes not directly imposed on and paid by business. Within the realm of taxation, the major alternatives to direct business taxation are the sales and personal income taxes. While no doubt the revenues from the sales could be increased by rate increases and/or a broader definition of the taxable sales, neither of these is appealing. While sales tax rates are not excessively high, neither are they low. Significant expansion of the tax base would appear to be feasible only by eliminating the nontaxable status of food sold in grocery stores. For a variety of reasons related to equity considerations, neither increases in sales tax rates nor expansion of the sales tax base is desirable. With regard to the resident income tax, the possibilities also appear to be limited. The progessivity of the rate structure, while perhaps not as great in some states, is greater than that of all other municipal income taxes. Alternatively, reductions in the allowable amounts of deductions and exemptions are not likely to yield major revenue increments.

The one tax revision which would seem to be consistent with the requisites of increasing tax revenue in the context of the changing structure of the D.C. economy is the taxation of incomes earned in the District by incommuters. Certainly, the fact that two-thirds of those employed in the District reside in the suburbs implies that commuter incomes provide a substantial—albeit untapped—base for additional revenues. Indeed, because the earnings of incommuters are relatively high, the potential revenue base of the commuter tax is greater than would be implied by the number of incommuters alone. These consid-

erations will be taken up below; however, first we turn to an analysis of the revenue growth implications of a shift to a land value only property tax.

LAND VALUE TAX

Overall, the impact of the shift to a land value property tax does not appear to hold forth great promise for revenue growth, as the yields of a land only property tax appear to be much more responsive to declining private sector activities (Table 16).[34] As a result, the revenue response to the changing employment structure, $12,403 million additional revenues, is less than the existing tax structure would yield—$13.571 million—under the same circumstances. Certainly, on the basis of this analysis, the movement to a land value only property tax would seem questionable. Still, the overall revenue response is the result of the netting of revenue losses in the declining sectors and revenue gains in the growing sectors.

Looking behind the overall revenue yield to revenue performance of the various employment sectors adds little, if any, support for the adoption of a land value only property tax. Revenue losses in three of the four declining sectors (manufacturing, TCPU and FIRE) would be smaller with the tax levied on land values alone. However, the revenue loss associated with the declining trade sector is much larger. In addition, of the growing sectors, only in the services would a shift to a land value tax result in greater revenues. Nonetheless, the important point is that the growth in revenues associated with a land value only property tax would be less than that which would be generated by the existing tax structure. This alone would seem to argue against a shift to a land value tax.[35]

COMMUTER EARNINGS TAX

Turning now to the commuter earnings tax, it should be noted that taxation of commuter earnings involves the imposition of a new tax, rather than the modification of an existing tax. Thus, although they differ greatly in amounts, all three options would have produced additional tax revenues if they had been imposed in 1975. Initial revenues are greatest with Option 2 ($160.385 million), followed by Option 1 ($91.738 million), and Option 3 ($34.807 million).[36] These revenue increments would have added substantially to 1975 general fund tax revenues,[37] i.e., Option 1, 17.8 percent; Option 2, 31.2 percent; and

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[34] Property tax revenues per employee, and therefore the changes in property tax revenues identified in Table 10, are calculated on the basis of a land tax levy which in 1975 would have yielded revenues equal to actual property tax revenues in that year. The calculation discussed in the text are based on the assumption that a shift to a land value tax would not alter the levels of per employee land value tax yield over the period considered. In addition, the analysis discussed here is based on a continuation of past employment trends, and thus implicity assumes that the change in the structure of the property tax would not alter these trends.

[35] There are a number of other considerations related to both equity and efficiency which lend support to the case for the levy of the property tax on land values only. These considerations, however, are beyond the scope of this analysis.

[36] Revenues are net of the current tax revenues ($15.254 million) that would be lost to the District because of tax credits for income tax paid by District residents working in Maryland and Virginia. The amount of tax credits is calculated from unpublished data on commuting patterns and average earnings provided by the Department of Commerce. (See Table 5 for source).

It is worth noting that these estimates are consistent with those provided by the District Director of Finance and Revenue as reported in a letter dated February 3, 1976, to Mr. David Patch, of the House District of Columbia Committee, House of Representatives, Congress of the United States.

[37] District General Fund Tax Revenues totaled $514.1 million in 1975 (Financial Report Fiscal Year 1975, District of Columbia)

Option 3, 6.8 percent. Differences in the levels of commuter income tax revenues are directly related to the level and progressivity of the assumed rate structure.

TABLE 16.—ESTIMATED REVENUE RESPONSES TO CHANGES IN TOTAL EMPLOYMENT AND THE STRUCTURE OF PROPERTY TAXATION, WASHINGTON, D.C.: 1975–79 [1]

[In thousands of dollars]

Employment class	Change in total tax revenues existing tax system	Change in total revenues with land value property tax	Difference in revenue change due to land value taxation
Construction	$1,827.8	$1,793.5	−$464.1
Manufacturing	128.7	−126.5	−8.2
TCPU [2]	1,339.5	−1,327.4	7.3
Trade [3]	6,195.2	−7,039.9	−1,156.5
FIRE [4]	17.2	−16.6	−.8
Services	4,736.4	4,759.3	−367.9
Government [5]	14,687.3	14,360.9	30,897.8
Estimated revenue loss due to employment loss	−7,680.6	−8,510.4	−1,997.5
Estimated revenue gain due to employment increase	21,251.5	20,913.7	30,905.1
Estimated total change in tax revenues	13,570.9	12,403.3	28,907.6

[1] Property tax on land values only.
[2] Transportation, communication and public utilities.
[3] Wholesale and retail trade.
[4] Finance, insurance and real estate.
[5] Includes Federal, civilian, and District employees.

Note: Rows and columns may not add to totals due to rounding.

Source: Tables 9 and 15.

Turning now to the question of response of commuter earnings taxes to changes in the composition of the economic base (Tables 17–19), it is clear that the District's prospects for revenue growth would be greatly enhanced by commuter taxation. Under all commuter tax options, the revenue potential of the tax system increased significantly. As was the case with initial revenue yield, the greatest revenue growth is associated with the commuter tax Option 2, which would yield $18.642 million more revenue than the current (1975) tax structure (Table 18), if recent changes in the District employment structure continued until 1979. The comparable figures for Option 1 (Table 17) and 3 are $10.876 million and $5.221 million respectively.[38] If to these amounts are added the revenue increments which commuter taxation would yield when initially imposed, the revenue position of the District would substantially improve over that which would be associated with no change in the tax structure. With the current (1975) tax structure, revenue growth between 1975 and 1979 would amount to 13.571 million (Table 16). Alternatively, the differences between revenues in 1975 and 1979 with commuter taxation are much greater: $116.185 million under Option 1 $192.598 million under Option 2 and $53.599 million under Option 3.[39]

[38] These revenue yields are calculated on the assumption that the revenue loss due to the creditability of Maryland and Virginia income taxes paid by District residents remain constant at the 1975 level. That is, the assumption underlying the calculation is that the number of outcommuters, their incomes, and their tax liabilities of Maryland and Virginia are held constant.

[39] These revenue increments include both the addition to tax revenue resulting from the initial imposition of the commuter tax and the projected 1975–1979 growth in tax revenues.

The corresponding rates of General Fund revenue tax growth are 22.6 percent, Option 1; 37.5 percent, Option 2; and 10.42 percent, Option 3. By comparison, with a commuter income tax, revenue from the taxes considered here can be expected to increase by about 2.98 percent.

TABLE 17.—ESTIMATED REVENUE RESPONSES TO CHANGES IN TOTAL EMPLOYMENT AND IN THE STRUCTURE OF THE INCOME TAX, WASHINGTON, D.C.: 1975–79

COMMUTER INCOME TAX—OPTION 1

[In thousands of dollars]

Employment class	Change total [1] revenues personal income tax option 1	Difference in tax revenues due to change in tax structures
Construction	$2,865.0	$1,037.2
Manufacturing	−159.4	−30.7
TCPU [2]	−1,575.4	−235.9
Trade [3]	−7,120.4	−925.2
FIRE [4]	−17.9	−.7
Services	6,012.4	1,276.0
Government [5]	24,442.6	−9,755.3
Estimated revenue loss due to employment loss	−8,873.1	−1,192.5
Estimated revenue gain due to employment increase	33,320	12,068.5
Estimated total change in total revenues	24,446.9	10,876.0

[1] Change in total revenues with commuter income tax calculated on the assumption that tax on commuter income tax replaces the tax on unincorporated business.
[2] Transportation, Communication and Public Utilities.
[3] Wholesale and Retail Trade.
[4] Finance, Insurance and Real Estate.
[5] Includes Federal, civilian and District employees.

Note: Rows and columns may not add to totals due to rounding.

Source: Tables 9 and 15.

TABLE 18.—ESTIMATED REVENUE RESPONSES TO CHANGES IN TOTAL EMPLOYMENT AND IN THE STRUCTURE OF THE INCOME TAX, WASHINGTON, D.C.: 1975–79

COMMUTER INCOME TAX—OPTION 2

[In thousands of dollars]

Employment class	Change total [1] revenues personal income tax option 2	Difference in tax revenues due to change in tax structures
Construction	$3,380.7	$1,552.9
Manufacturing	−177.3	−48.6
TCPU [2]	−1,704.9	−365.4
Trade [3]	−7,462.3	−1,267.1
FIRE [4]	−18.2	−1.0
Services	6,644.7	1,908.3
Government [5]	31,550.6	16,863.3
Estimated revenue loss due to employment loss	−9,362.7	−1,682.1
Estimated revenue gain due to employment increase	41,576.0	20,434.5
Estimated total change in total revenues	32,213.3	18,642.4

[1] Change in total revenues with commuter income tax calculated on the assumption that tax on commuter income tax replaces the tax on unincorporated business.
[2] Transportation, Communication and Public Utilities.
[3] Wholesale and Retail Trade.
[4] Finance, Insurance and Real Estate.
[5] Includes Federal, civilian and District employees.

Note: Rows and columns may not add to totals due to rounding.

Source: Tables 9 and 15.

TABLE 19.—ESTIMATED REVENUE RESPONSES TO CHANGES IN TOTAL EMPLOYMENT AND IN THE STRUCTURE OF THE INCOME TAX, WASHINGTON, D.C.: 1975–79

COMMUTER INCOME TAX—OPTION 3

[In thousands of dollars]

Employment class	Change total [1] revenues personal income tax option 3	Difference in tax revenues due to change in tax structures
Construction	$2,303.5	$475.7
Manufacturing	−142.8	−14.1
TCPU [2]	−1,445.9	−106.4
Trade [3]	−6,547.1	−351.9
FIRE [4]	−17.5	−.3
Services	5,276.7	540.3
Government [5]	19,365.5	4,678.2
Estimated revenue loss due to employment loss	−8,153.3	472.7
Estimated revenue gain due to employment increase	26,945.7	5,694.2
Estimated total change in total revenues	18,792.4	5,221.5

[1] Change in total revenues with commuter income tax calculated on the assumption that tax on commuter income tax replaces the tax on unincorporated business.
[2] Transportation, communication and public utilities.
[3] Wholesale and retail trade.
[4] Finance, insurance and real estate.
[5] Includes Federal, civilian, and District.

Note: Rows and columns may not add to totals due to rounding.

Source: Tables 9 and 15.

In conclusion, it would seem that, given the structure of taxation, the changing structure of the District's economy does not hold forth a promise for substantial growth in tax revenues. The same can be said whether the property tax is levied on the values of land and improvements or on land values only.

Alternatively, substantial revenue increments could be expected from the initiating of commuter taxation. In addition, the prospects for revenue growth would be improved by commuter taxation. However, the revenue yields of commuter taxation differ greatly depending on the definition of the tax base and tax rate. Prospects for revenue growth are best with commuter taxes which have progressive rate structures. In fact, beyond the initial increment which would result from the initiation of a new commuter tax, growth prospects for a flat 1.5 percent rate commuter tax are not substantial.

Appendix

THE RELATION OF TAX REVENUES TO EMPLOYMENT ESTIMATING MODELS AND THEIR APPLICATION

The level of tax revenues, R, per employee, N, accruing to the District's government may be defined as:

$$\frac{R}{N}=\sum_{j}\sum_{i}\frac{R_{ij}}{N_i}+\frac{R_o}{N}, \tag{1}$$

where R_{ij} refers to the total tax revenues attributable to employment in sector i and to the jth tax—real property, personal income, business, sales, and all other.[1] All direct taxes by firms in sector i, and all personal taxes paid by employees in sector i are attributable directly to employment in that sector. The term Ro refers to District government tax revenues generated by persons not employed in the District.

The models underlying the tax revenue-employment relation and the estimation associated with them, are presented below for each of the four principal taxes.[2]

Total real property tax revenues (PR_i) attributable to any particular employment sector i may be defined as:

$$PR_i=PR_i^{nr}+PR_i^{r}(\mu_i), \tag{2}$$

Where:

PR_i^{nr} = nonresidential property tax payments generated in the ith employment sector;

PR_i^{r} = residential property tax payments generated in the ith employment sector;

μ_i = the proportion of employees in the District in the ith sector who reside within the boundaries of the District.

$PR_i^{r}(\mu_i)$, then, measures the residential property tax revenues accruing to the District's government which are generated by resident employees in industry i.[3]

Revenues from the taxation of nonresidential property may be defined as:[4]

$$PR_i^{nr}=ra_i^{nr}\left(\frac{P}{S}\right)_i\left(\frac{S}{N}\right)_i N_i \tag{3}$$

where:

r = the nominal tax rate;

a_i^{nr} = the ratio of assessed to market value of nonresidential property;

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[1] While the models and estimates discussed in this appendix are tailored to the structures of taxation and employment in Washington, D.C., they follow the general form and procedure initially developed elsewhere. See Bahl, Campbell, and Greytak. "Taxes, Expenditures, and the Economic Base," (New York: Praeger, 1974).

[2] For a detailed analysis of the technical nature of these models, see Bahl, Campbell and Greytak, *Ibid.*, Chapter 2 and the citations therein and Bahl and Greytak, *Ibid.*

[3] It is worth noting that u may vary across the i employment sectors and that the reverse commuting possibility is not built into the model. It is omitted because the revenue effect of changes in the District's employment structure is the main concern.

[4] Although the subscript i identifies the employment sector, it should be noted that property in each sector is disaggregated by type; i.e., industrial, warehouse, office, etc. Subscripts identifying property in each sector by type of use have been omitted for simplicity in presentation.

$\left(\frac{P}{S}\right)_i$ = market value per square foot of taxable nonresidential property used in sector i;

$\left(\frac{S}{N}\right)_i$ = the average quantity (number of square feet) of taxable prope rt per employee in sector i.

N_i = the level of employment in sector i.

Residential property tax revenues are defined as:

$$PR_i^r = ra^r\left(\frac{H}{Y}\right)_i\left(\frac{Y}{\mu N}\right)_i \mu_i N_i \tag{4}$$

where:

a^r = ratio of the assessed to market value of residential property;

$\left(\frac{H}{Y}\right)_i$ = the ratio of residential property value to income for employees in sector i.

The subscript denoting the ith industry class will be dropped from here on, with the understanding that, unless otherwise stated, any equation will refer to any given industry. Substituting (3) and (4) into (2), and taking the property tax rate to be exogenously determined,[5] the total differential of (2), upon rearrangement of terms, yields:

$$dPR = ra^{nr}\left(\frac{P}{S}\right)\left(\frac{S}{N}\right)dN[\eta_{ps}\eta_{sn}(1+\eta_{ap}{}^{nr})] + ra^r\left(\frac{H}{Y}\right)\left(\frac{I}{\mu N}\right)\mu dN[\eta_{hy}\eta_{yl}\eta_{ln}(1+\eta^r{}_{ah})] \tag{5}$$

where:

$\eta_{sn} = \frac{dS}{dN}\frac{N}{S}$ = the elasticity of space with respect to employment;

$\eta_{ap}{}^{nr} = \frac{da}{dP}\frac{P}{a}$ = the elasticity of the nonresidential assessment ratio with respect to market value;

$\eta_{ps} = \frac{dP}{dS}\frac{S}{P}$ = the elasticity of the price per square foot of property with respect to space used;

$\eta_{hy} = \frac{dH}{dY}\frac{Y}{H}$ = the elasticity of residential property value with respect to income; i.e., the income elasticity of demand for housin g

$\eta_{yl} = \frac{dY}{dL}\frac{L}{Y}$ = the elasticity of resident employment income with respect to resident employment;

$\eta_{ln} = \frac{dL}{dN}\frac{N}{L}$ = the elasticity of resident employment with respect to total employment;

$\eta_{ah}{}^r = \frac{da}{dH}\frac{H}{A}$ = the elasticity of the resident assessment ratio with respect to market value.

[5] The treatment of the property tax rate as exogenous may legitimately be questioned. The position taken here is that the primary determinants of the rate are the level of intergovernmental aid, the level of expenditures chosen, and political factors; hence, it should be treated as exogenous.

The personal income tax model developed here incorporates a commuter tax. Although currently only that income earned in the District by District residents is subject to the personal income tax, a tax on commuter income is included in order to allow a consideration of the revenue effects of the initiation of such a tax. Therefore, the model of personal income tax revenues (IR) has two components:

$$IR = IR^r + IR^c, \tag{6}$$

where the superscripts r and c denote resident income and commuter tax revenues, respectively. Revenues derived from the taxation of resident employee personal income in any sector are:

$$IR^r = r^r\left(\frac{TY}{\mu N}\right)\mu N \tag{7}$$

where:

r^r = the effective resident income tax rate;

$\frac{TY}{\mu N}$ = the average taxable income per resident employee.

Similarly, for the commuter earnings tax,

$$IR^c = r^c\left(\frac{W}{C}\right)(1-\mu)N \tag{8}$$

where:

r^c = the rate of taxation on commuter earnings;
W = the taxable earnings of commuters;
C = number of commuters.

Substituting (8) and (7) into (6), the total differential, upon rearrangement of terms, yields (for any given sector i):

$$dIR = r^r\left(\frac{TY}{\mu N}\right)\mu dN[(\eta_{ry}+1)\eta_{yl}\eta_{ln}] + r^c\left(\frac{W}{C}\right)dN(1-\mu)\eta_{wc}\eta_{cn} \tag{9}$$

where:

η_{ry} = the elasticity of the effective resident income tax rate with respect to resident income;
η_{wc} = the elasticity of taxable earnings of commuters with respect to the number of commuters;
η_{cn} = the elasticity of the number of commuters with respect to total employment.

The principal forms of business taxation in the District are the general corporation and unincorporated business taxes, the financial institution, the insurance, and the public utility taxes. These taxes are all examined here under the heading of business taxation. Revenues derived from the taxation of business income, BR, in any sector i, are:

$$BR = r^b\left(\frac{BY}{K}\right)\left(\frac{K}{N}\right)N \tag{10}$$

where:

r^b = the effective rate of taxation on business income;[6]

$\frac{BY}{K}$ = the ratio of business income to total physical capital stock;

$\frac{K}{N}$ = the ratio of physical taxable capital to employment in sector i.

[6] More accurately, the financial institution, public utilities, and insurance taxes are imposed on gross earnings, gross receipts, and gross premiums respectively.

Taking the total differential, and rearranging terms, yields:

$$dBR = r^b\left(\frac{BY}{K}\right)\left(\frac{K}{N}\right)dN[\eta_{byk}\eta_{kn}(1+\eta_{rby})] \tag{11}$$

where:

η_{rby} = the elasticity of the effective tax rate with respect to business income;
η_{byk} = the elasticity of taxable business income with respect to physical corporate capital;
η_{kn} = the elasticity of physical corporate capital with respect to employment.

As with the property and personal income taxes, it is necessary to differentiate between sales tax revenues derived from resident employees and those derived from nonresident employees in each industry. Thus,

$$SR = SR^r + SR^c \tag{12}$$

where the $SR_i{}^r$ and $SR_i{}^c$ refer to District sales tax revenues attributable to consumption spending by the resident and commuter components of employment in sector i.

Since sales tax revenues are derived from the purchase of taxable consumption goods within the city, resident sales tax revenues SR^r can be stated as:

$$SR^r = r^s\left(\frac{TC}{Y}\right)\left(\frac{Y}{\mu N}\right)N \tag{13}$$

where:

r^s = the nominal sales tax rate;

$\frac{TC}{Y}$ = the ratio of taxable consumption to income for resident employees;

$\frac{Y}{\mu N}$ = income per resident employee.

Similarly, sales tax revenues attributable to commuters (SR^c), are:

$$SR^c = r^s\left(\frac{CT}{CY}\right)\left(\frac{CY}{C}\right)(1-\mu)N \tag{14}$$

where:

$\frac{CT}{CY}$ = the ratio of taxable consumption to income for commuter employees;

$\frac{CY}{C}$ = the ratio of commuter income to the number of commuting employees.

Substituting equations (13) and (14) into equation (12), taking the total differential and rearranging terms yields, for any sector i:

$$dSR = r^s\left(\frac{TC}{Y}\right)\left(\frac{Y}{\mu N}\right)\mu dN[\eta_{tcy}\eta_{ly}] + r^s\left(\frac{CT}{CY}\right)\left(\frac{CY}{C}\right)(1-\mu)dN[\eta_{ctcy}\eta_{cyc}\eta_{cn}] \tag{15}$$

where:

η_{tcy} = the elasticity of resident taxable consumption with respect to resident income;
η_{yl} = the elasticity of resident income with respect to resident employment;
η_{ln} = the elasticity of resident employment with respect to total employment;
η_{ctcy} = the elasticity of commuter taxable consumption with respect to commuter income;
η_{cyc} = the elasticity of commuter income with respect to commuter employment;
η_{cn} = the elasticity of commuter employment with respect to total employment.

The total change in tax revenues in response to any given employment change in the District may be estimated as the sum of equations (5), (9), (11), and (15), summed over all i employment classes.

ESTIMATION

The model developed above describes the response of local government tax yields to changing employment levels. The data required to estimate the full model in this complete form are not available. However, if a set of limiting assumptions is made about these elasticities, the model may be simplified considerably and estimated with available data.[7] Specifically, we assume the following:

1. Firms produce outputs according to Leontief type, i.e., fixed factor, production functions ($\eta_{sn}=1$, $\eta_{kn}=1$).
2. The income elasticity of demand for housing ($\eta_h{}^e$) is unity.[8]
3. The property tax assessment ratio within any particular sector is a constant ($\eta_{ap}{}^{nr}=0$, $\eta_{ah}{}^r=0$).
4. The proportion of resident to commuter employment remains constant ($\eta_{ln}=1$, $\eta_{cn}=1$).
5. The income elasticity of resident and commuter taxable consumption is unity ($\eta_{tcu}=1$, $\eta_{ctcu}=1$).
6. The elasticity of resident employee income, commuter wages and commuter income, each with respect to total employment, is unity ($\eta_{wl}=1$, $\eta_{wc}=1$, $\eta_{ln}=1$ and $\eta_{cn}=1$).
7. The effective rates of employee and business income taxation are constant ($\eta_{ru}=0$, $\eta_{rbu}=0$).
8. The elasticity of the effective business income tax rate with respect to business income is zero ($\eta_{r^b}{}^y=0$).
9. The elasticity of taxable business income with respect to business capital is unity ($\eta_{byk}=1$).

With these assumptions, the response of city tax revenues to a change in employment in any given sector i reduces to:

$$\left(\frac{dR}{dN}\right)=\left[ra^{nr}\left(\frac{P}{S}\right)\left(\frac{S}{N}\right)+ra^r\left(\frac{H}{Y}\right)\left(\frac{Y}{\mu N}\right)\mu\right]+\left[r^r\left(\frac{TY}{\mu N}\right)\mu+r^c\left(\frac{W}{C}\right)(1-\mu)\right]$$
$$+\left[r^b\left(\frac{BY}{K}\right)\left(\frac{K}{N}\right)\right]+\left[r^s\left(\frac{TC}{Y}\right)\left(\frac{Y}{\mu N}\right)\mu+r^s\left(\frac{CT}{CY}\right)\left(\frac{CY}{C}\right)(1-\mu)\right)\right] \tag{16}$$

The assumption applied here would seem plausible as long as total employment and total population remain constant, e.g., if a firm i with N employees is replaced by a firm j with N employees, the residential and nonresidential property tax effects are dependent on the characteristics of the industry and the income of its workers. Where there is a net gain in employment, this model would also suggest a net gain in population, and an increase commercial, industrial, and residential housing capacity.

The model described in (16) requires the estimation of each variable by major industry sector. The data and procedures underlying this estimation are described in the remainder of this appendix. These data are derived from a number of sources, including special tabulations from unpublished records of several departments of both the District and Federal governments.

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[7] For the most part, these assumptions would seem plausible. Where the reader does not agree, at least the general direction of the estimation error may be deducted by considering the full model in light of alternative assumptions.

[8] Though there is some support for this thesis, the evidence is mixed (Aaron, Henry, 1972. "Shelters and Subsidies: Who Benefits from Federal Housing Policies." Washington, D.C.: The Brookings Institute. Also De Leeuw, Frank, 1971. "The Demand for Housing: A Review of Cross-Section Evidence." Review of Economic and Statistics 53 (February): 1–10).

TABLE A-1.—RESIDENTIAL, NONRESIDENTIAL, AND TOTAL TAX BASE AND TAX REVENUES PER EMPLOYEE, WASHINGTON, D.C.: 1975

Employment class	Tax base			Tax revenues		
	Residential	Nonresidential	Total	Residential	Nonresidential	Total
Agriculture	$3,788	$104,637	$108,425	$69	$1,915	$1,984
Mining		84,649	84,649		1,549	1,549
Construction	1,959	774	2,733	36	14	50
Manufacturing	2,513	13,202	15,715	46	242	288
TCPU[1]	2,299	1,202	3,501	42	22	66
Trade[2]	3,137	16,766	19,903	59	307	364
FIRE[3]	2,848	112,233	115,081	52	2,056	2,108
Services	2,916	4,310	7,226	53	79	132
Government[4]	2,776		2,776	51		51
Total	2,797	10,216	13,013	51	187	238

[1] Transportation, communication and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance and real estate.
[4] Civilian only.

Source: See text.

Property tax

An estimate of the level of residential property taxes (Table A1) generated by employees in each of the District's employment sectors requires estimates, by industry class, of employee income (Y), housing value (H), nonresident employees as a percent of total employment (u), and the assessment ratio (a). Estimates of these parameters and the calculation of intersectoral variations in residential property taxes per employee are based on estimates of average income per employee in each sector (the produce of average employees earnings (Table 5) as reported by the Department of Commerce, and the ratio of gross income to earnings, as reported by the District's Office of Finance and Revenues).[9] It is assumed that after adjusting for the proportions of resident employees residing in single and multiple family dwellings that this estimate maps directly into family income classes as given in the Census of Housing.[10] This allows the imputation of an average housing value to each sector from census crossclassifications of median values of owner occupied dwelling units, median rental values, and average income. The average assessment ratios for single and multiple family residential property in 1975 were .793 and .937 percent respectively and they are assumed to be equal for employees in all employment sectors.[11]

The product of the assessment ratios and the estimated housing values yields an estimate of assessed value (Table A–2, col. 1). Applying the nominal 1975 tax rate of 0.0183 to the assessed values yields the average tax liability per employee in each sector (column 4).[12]

The a variation in revenue generation per employee, being high for government and low for agriculture, trade, and services, which reflect income differentials.

[9] In this, as well as all calculations involving wages and salaries, the average reported in the text was calculated from a set of employment and earnings data which identified the number of total, resident, in and out commuter employees, and their average earnings at various levels. The authors are greatful to Daniel Garnick of the Bureau of Economic Analysis of the Department of Commerce for having provided these preliminary tabulations of unpublished data. Adjusted gross income was calculated as the product of average earnings and the ratio of adjusted gross income to salaries and wages for all classes from Statistics on District of Columbia Income, District of Columbia, Department of Finance and Revenue, Fiscal Planning and Research, December 1974, Table 5–S, p. 64.

[10] The proportion of employees residing in single and multiple family dwellings were obtained from surveys of District residents reported in "Fiscal Pressures on the District of Columbia," Hearing Before the Committee on the District of Columbia, U.S. Senate, pt. 1—"Economic & Demographic Overview" February 17, 1976, p. 310. Median house and rental are from U.S. Bureau of the Census, Census of Housing: 1970, "Metropolitan Housing Characteristics." Final Report HC(2)–232, Washington, D.C.-Md.-Va., SMSA, U.S. Government Printing Office, 1972 Table E–1, p. 53 and Table E–2, p. 54.

[11] Department of Finance and Revenue, "1976 Real Property Sales Ratio Study", Washington, D.C., August 1976.

[12] The proportion of commuter employees in each sector was used to adjust total yield per employee to that received bythe city government.

The nonresidential property tax has been identified in terms of the value of taxable real property per employee, i.e., the product of the (S/N), (P/S) and the assessment ratios (a). Estimation of these values was unnecessary, however, as the taxable value of nonresidential property by type of use was obtained from unpublished tabulation of assessed values provided by the District's Department of Finance and Revenue.[13] Nonresidential property tax revenue are obtained as the product of assessed values and the 1975 tax rate.

The variations in nonresidential assessed value (column 2) and tax revenues per employee generally conform to a prior expectations. They are high in the office-oriented sectors—F.I.R.E., agriculture, and mining—and low in trade and services. The transportation, communication, and public utilities class represents a special case as does construction. In the former, the values are low because of the special status of public utilities, which are subjected to a particular public utility tax.

Alternatively, construction activities, because of their "on site" nature, generally require only relatively small amounts of real property—essentially office space.

In terms of the overall per employee tax base and tax revenues, it is the nonresidential component which generates the large differences among employment classes. This is to be expected, given that the District functions primarily as an employment rather than a residential location.

TABLE A-2.—RESIDENT INDIVIDUAL INCOME TAX BASE AND REVENUES PER EMPLOYEE, RESIDENT AND TOTAL BY EMPLOYMENT CLASS, WASHINGTON, D.C.: 1975

	Tax base per employee		Tax revenue per employee	
	Resident	Total	Resident	Total
Agriculture	$5, 199	$2, 600	$100	$50
Mining				
Construction	10, 994	2, 749	405	101
Manufacturing	12, 916	3, 507	521	141
TCPU [1]	11, 798	3, 383	432	124
Trade [2]	6, 993	2, 957	203	86
FIRE [3]	8, 657	2, 278	277	104
Services	9, 092	3, 488	309	119
Government	18, 572	5, 064	847	231
Federal [4]	19, 460	5, 305	902	246
District	15, 195	4, 149	638	174
Total	12, 569	4, 086	506	164

[1] Transportation, communication and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance and real estate.
[4] Civilian only.

Source: See text.

Personal Income Tax

Resident personal income tax base and revenues per employee in each sector have been identified above at the product of taxable income per resident employee (TY ηN) and the effective income tax rates. Taxable income, the tax base, is estimated as the product of wage and salary income per employee (Table 5) and the ratio of adjusted gross income to salaries and wages as calculated from unpublished data provided by the Department of Finance and Taxation.[14] Tax liabilities and the effective tax rate were than estimated by appling the appropriate nominal tax rate to the tax base adjusted for deductions and exemptions.[15] Both the tax base and revenues per resident employee (columns

[13] Generally, the type of use classification by which property values are reported in these tabulations corresponds exactly with the employment classes employed in this analysis. In the one case in which the classifications did not match, commercial offies, property values were allocated among employment that is, administrative and auxiliary employment in the District of Columbia from U.S. Bureau of the Census, County Business Patterns, 1973, United States CBP-73-1, U.S. Government Printing Office, Washington, D.C. 1974.

[14] "Statistics on District of Columbia Income", Department of Finance and Revenues, Fiscal Planning and Research, December 1974, Table 5-S, p. 64.

[15] Department of Finance and Revenues, Fiscal Planning and Research (unpublished preliminary data). Calendar year 1975.

1 and 3) were then adjusted by the ratio of District resident employment to total employment to obtain per employee tax base and tax revenues (column 2 and 4 respectively).

The major components of the personal income tax base are wages and salaries; therefore, variations in the resident per employee tax base closely parallel the variations among employment sectors in average wages and salaries. When the tax base and tax revenues are translated into total employment, the levels are much lower. In this case, the variation in the base and revenues per employee then reflects both differences in the level of tax base and revenues associated with a resident employee, and the differences in commuting patterns of employees in the different employment sectors.

TABLE A-3.—COMMUTER EARNING TAX BASES AND REVENUE PER NONRESIDENT EMPLOYEE, BY EMPLOYMENT CLASS AND BY TYPE OF COMMUTER TAX, WASHINGTON, D.C.; 1975

	Tax base per nonresident employee			Tax revenues per nonresident employee		
	Option 1	Option 2	Option 3	Option 1	Option 2	Option 3
Agriculture	$14, 122	$8, 372	$8, 372	$273	$396	$126
Mining	21, 344	15, 594	15, 594	480	938	234
Construction	12, 502	7, 321	7, 321	241	361	110
Manufacturing	13, 221	8, 053	8, 053	260	412	121
TCPU [1]	14, 108	8, 573	8, 573	277	428	127
Trade [2]	9, 439	4, 893	4, 893	171	231	73
FIRE [3]	11, 044	5, 966	5, 966	206	287	89
Services	9, 949	5, 555	5, 555	187	277	83
Government	17, 596	11, 846	11, 846	370	639	178
Federal [4]	18, 471	12, 721	12, 721	394	708	191
District	14, 258	8, 508	8, 508	277	406	128
Total	14, 083	8, 862	8, 862	284	466	133

[1] Transportation, communication and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance and real estate.
[4] Civilian only.

Source: See text.

A commuter income tax is not currently imposed by the District. However, for the purposes described in the text, per employee tax bases and revenues were calculated for three alternative commuter tax structures. In Option 1, taxable income is defined as wages and salaries earned in the District by incommuter minus a standard deduction of $750. Tax rates for each level of taxable income are defined as being equal to one-third the comparable tax rate applied to District residents. In Option 2, taxable income is equal to wages and salaries earned in the District minus a standard deduction of $6,500. The rate structure is the same as the applied in the resident personal income tax. In Option 3, taxable income is wages and salaries earned in the District minus a $6,500 deduction. In this case, the tax rate is a flat one and one half percent.

The tax base and revenues associated with these three options of commuter income taxation are given in Table A-3. Variations in the base and revenue per employee values follow from wage differences among the employment sectors. In Options 1 and 2 the intersector variations in revenues per employee are amplified by the Progressive rate structure. In addition, as options 2 and 3 allow such a large standard deduction, some of the variations in base per employee result from differences among the employment class in the proportions of commuters earning low incomes.

Sales Tax

Sales tax bases are calculated by applying estimates of the proportions of income spent on taxable items to total income by income level. These proportions were obtained from the BLS Consumer Expenditure Survey.[16] Following past research, the amount of commuter spending on District taxable items which actually occurs in the District, and is therefore subject to the District sales tax, is calculated on a set of assumptions about the proportions of commuter

[16] U.S. Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Survey Series: Interview Survey, 1972 and 1973, Report 455-3, Table 1b, p. 1423.

spending for each type of commodity which takes place in the District.[17] The tax base and revenues per resident employee and per commuting employee, and the average for all employees by sector are given in Table A–4.

TABLE A–4.—SALES TAX BASE AND REVENUES PER EMPLOYEE BY EMPLOYMENT CLASS, RESIDENT, COMMUTER AND TOTAL EMPLOYMENT, WASHINGTON, D.C.: 1975

	Tax base			Tax revenue		
	Resident	Nonresident	Total	Resident	Nonresident	Total
Agriculture	$3,624	$776	$2,200	$166	$40	$103
Mining		1,440	1,440		73	73
Construction	4,105	883	1,688	191	45	81
Manufacturing	4,505	929	1,900	210	47	91
TCPU [1]	4,322	978	1,937	201	50	93
Trade [2]	2,899	702	1,631	133	36	77
FIRE [3]	3,452	803	1,798	159	41	85
Services	3,560	732	1,817	164	37	86
Government	6,124	1,196	2,540	287	61	123
Federal [4]	6,417	1,253	2,661	301	64	128
District	5,010	978	2,079	235	50	100
Total	4,488	1,025	2,151	209	50	102

[1] Transportation, communication and public utilities.
[2] Wholesale and retail trade.
[3] Finance, insurance, and real estate.
[4] Civilian only.

Source: See text.

Business Taxes

The variations in the business tax revenues per employee require estimations of the income earned per unit of capital and the capital-labor ratio. However, as the revenues of the financial institution, public utilities, and insurance taxes can be directly allocated to the appropriate employment classes, it is necessary to allocate only the corporation and unincorporated business taxes by employment class. If estimates of each industry's share of the incorporated business income tax base, and therefore the revenues of this tax, were available, they were directly allocated.[18] Revenues by employment class for the unincorporated business tax were derived by allocating tax revenues to employment classes in proportion to the federal taxable unincorporated business incomes reported by District firms.[19]

TABLE A–5.—TOTAL CORPORATE AND UNINCORPORATED BUSINESS TAX REVENUES PER EMPLOYEE BY EMPLOYMENT CLASS, WASHINGTON, D.C.: 1975

Employment class	Total corporate business taxes [1]	Total unincorporated business taxes	Total corporate and unincorporated business taxes
Agriculture			$314
Mining			
Construction	$87	(2)	87
Manufacturing	268	$2	270
TCPU [3]	821	6	827
Trade [4]	82	7	89
FIRE [5]	559	9	568
Services	71	4	75
Total	114	8	122

[1] Includes financial institutions, insurance and public utility taxes.
[2] Less than $1.
[3] Transportation, communication, and public utilities.
[4] Wholesale and retail trade.
[5] Finance, insurance, and real estate.

Source: See text.

[17] See Greene, K. V., Neenan, W. B. and Scott, C. D., Fiscal Interactions in A Metropolitan Area, Lexington Books, 1974.
[18] These estimates were provided by Professor Kenneth Ainsworth of Allegeny College.
[19] Internal Revenues Service, Statistics of Income, 1977, Business Tax Returns, 1972, Table 2.5, p. 43.

THE SALES TAX IN THE DISTRICT OF COLUMBIA REVENUE SYSTEM

(By Ronald C. Fisher, Assistant Professor of Economics, Michigan State University)

The District has used a general sales and use tax to provide revenue since 1949. Although the sales tax provides only a moderate amount of the District's revenue, its importance has been increasing so that it is now at a level sufficient to cause concern about its economic effects on the structure of retail trade in the District, the equity implications for the local revenue system, and its effects on the strength and status of the city in the metropolitan region. This paper analyzes the District of Columbia sales tax in a regional context to determine the effects the tax has had on the city, to suggest its revenue potential, and to identify any potential effects of rate or base changes. To be most useful, the analysis in this paper should be considered in consort with the other studies being completed for the Commission.

I. Overview: Sales Taxes in the Metropolitan Region

The District currently imposes a general 5 percent tax on gross receipts from retail sales, use, rental, storage, or consumption of tangible property and some services. Important commodities exempt from the tax are groceries and medicines and drugs (both prescription and nonprescription). The sales or use of some commodities are taxed at rates different from 5 percent, so that one can think of additional excise taxes and subsidies on some goods. Transient accommodations and food and beverages sold for off premises consumption are taxed an additional 3 percent, for a total sales tax rate of 8 percent. In addition, alcoholic beverages (off premises consumption) are taxed an additional 1 percent (6 percent) and motor vehicle parking or storage is taxed an extra 7 percent (12 percent). Overall rates are shown in table 1.

District of Columbia sales and use taxes in fiscal year 1976 raised $117.5 million, providing less than 10 percent of the city's total revenue (table 2) although nearly 20 percent of tax revenue. During the last 5 years, this tax has increased in significance, both in terms of total revenue and taxes, partially because of a major rate increase in late 1972.

The sales and use tax was adopted in August 1949, and initially set at 2 percent. The general rate was increased to 3 percent in April 1962, to 4 percent in 1968, and to the current 5 percent in August 1972. A 1 percent tax on groceries was imposed in 1954, raised to 2 percent in 1969, while in October 1975, groceries were again made exempt. Some of the major rate and base changes are detailed in table 3.

TABLE 1.—SALES AND USE TAX RATES IN THE DISTRICT OF COLUMBIA METROPOLITAN AREA, 1977

[In percent]

Base	District of Columbia	Montgomery County	Prince George County	Arlington County	Fairfax County	Alexandria City	Fairfax City
General	5	4	4	4	4	4	4
Food (off premises)	0	0	0	4	4	4	4
Medicine (nonprescription)	0	0	0	4	4	4	4
Transient accommodations	8	9	9	6	6	8	4
Restaurant meals	8	4	4	4	4	5	4
Laundry and dry cleaning	0	4	4	0	0	0	0
Parking	12	0	0	0	0	0	0
Admissions	5	0.5–10	0.5–10	0	0	0	0

Source: District of Columbia Department of Finance and Revenue, "A Comparison of Tax Rates in the Washington Metropolitan Area," September 1976.

TABLE 2.—THE SALES TAX IN THE DISTRICT OF COLUMBIA REVENUE SYSTEM

	Sales tax revenue (millions)	Sales tax as a percentage of		Annual percentage change sales tax
		Total taxes	Total revenue	
Fiscal year:				
1976	$117.5	19.1	9.4	3.4
1975	113.7	20.9	8.1	6.2
1974	107.1	20.4	7.9	10.1
1973	97.3	19.6	7.9	18.5
1972	82.1	17.9	7.7	5.7

Sources: District of Columbia, "Annual Financial Report 1976;" "Summary of Sales and Use Tax Returns," various years; Advisory Commission on Intergovernmental Relations; "Significant Features of Fiscal Federalism," various years.

In considering the effects of the D.C. sales tax, one must recognize that those effects are not limited only to the city and similarly that sales taxes of metropolitan jurisdictions outside the city have economic consequences for the District. Thus it is necessary to compare the structures of the District and suburban sales taxes. One is particularly concerned that rate differences on any commodities can affect individual choices about where to shop and might eventually affect the location decisions of firms. The importance of this efficiency or locational effect is likely to vary depending on the size of the rate differential and the nature and cost of the commodity.

Therefore, a basic comparison of current sales tax rates in the metropolitan area on various commodities is presented in table 1, while a historical comparison of general sales tax rates is given in table 4. Currently, and indeed for the past 5 years, the District has incurred a 1 percent rate disadvantage on most commodities compared to both the Virginia and Maryland suburbs. The District has a large rate differential advantage (4 percent) compared to the Virginia suburbs on groceries and nonprescription medicines. There is also a large rate differential disadvantage for the District on restaurant meals and varying rates applied to transient accommodations with no outstanding regional distinction. The District also taxes parking and some admissions more heavily than its neighbors, although for reasons noted later, this should not be important.

TABLE 3.—HISTORY OF THE SALES TAX STRUCTURE

Effective date:	Structural change
Aug. 1, 1949	2 percent general rate adopted.
Aug. 1, 1954	1 percent rate on groceries; 3 percent rate on transient accommodations.
Apr. 1, 1962	3 percent general rate; 4 percent rate on transient accommodations.
Nov. 1, 1966	5 percent rate on transient accommodations; cigarette sales taxable at the general rate.
Sept. 1, 1968	4 percent general rate.
Oct. 31, 1969	2 percent rate on groceries; 2 percent rate on nonprescription drugs; 5 percent rate on restaurant meals.
Oct. 1, 1972	5 percent general rate; 6 percent rate on transient accommodations and restaurant meals.
Oct. 21, 1975	Groceries, nonprescription drugs, laundry, and dry cleaning made exempt.

Source: District of Columbia Department of Finance and Revenue, "Summary of Sales and Use Tax Returns," various years.

TABLE 4.—A HISTORICAL COMPARISON OF GENERAL SALES TAX RATES[1] IN THE DISTRICT OF COLUMBIA METROPOLITAN AREA.

[In percent]

Fiscal year[2]	District of Columbia	Maryland suburbs	Virginia suburbs	Fiscal year[2]	District of Columbia	Maryland suburbs	Virginia suburbs
1961	2	3	0	1970	4	4	4
1962	2	3	0	1971	4	4	4
1963	3	3	0	1972	4	4	4
1964	3	3	0	1973	5	4	4
1965	3	3	0	1974	5	4	4
1966	3	3	0	1975	5	4	4
1967	3	3	3	1976	5	4	4
1968	3	3	3	1977	5	[3] 4	4
1969	4	3	4				

[1] The sales and use tax rate generally used; there were variations in the tax base and other excise taxes or subsidies in addition to this rate.
[2] When a new rate became effective during a fiscal year, the rate applicable during the majority of that fiscal year is listed.
[3] The Maryland general rate was increased to 5 percent on June 1, 1977.

Source: Advisory Commission on Intergovernmental Relations, Significant Features of Fiscal Federalism, various years

The comparison of general sales tax rates between the District and the suburbs over the lifetime of the D.C. sales tax can be separated into four general periods of different rate comparisons. From 1961–62, the District general rate was higher than in the Virginia suburbs but lower than in Maryland. During the period 1963–66, the District had an adverse rate differential only compared to the Virginia suburbs. Between 1967 and 1972 there was essentially no general rate differential at all, while, as previously mentioned, during the last 5 years the District's general rate has been 1 percentage point higher than in the suburbs.

Recently, Maryland has moved to raise the general sales tax rate to 5 percent effective June 1, 1977. Thus, if no other rate changes occur, fiscal year 1978 will see a return to the situation of 1963–66: equal rates in the District and Maryland with a lower rate in Virginia.

It is very difficult to make a comparison of the role of sales taxes in the revenue systems of the suburban jurisdictions and the District because most of the sales tax revenue in the suburbs is collected from the State sales tax and then distributed to local governments. Consequently only a rough comparison can be made. For fiscal year 1975, State and

local governments in Virginia in aggregate received 10.5 percent of general revenue from general sales taxes. In Maryland, the comparable figure is 8.4 percent and in the District, 8.1 percent. On average then there appears to be little difference in the importance of sales tax revenue to the governments in the D.C. metropolitan region.[1]

II. The Special Problems of Local Sales Taxation

An economic analysis of local sales taxation includes in addition to the general efficiency and equity issues applicable to any sales tax, the efficiency issues that arise because of varying tax rates on different commodities imposed by neighboring local governments. Because the latter are expected to be particularly significant in metropolitan areas where there are numerous local governments, varying tax rates, and a mobile and well-informed population, and because of all these factors apply to the District of Columbia metropolitan area, a short discussion is in order.

The basic question here is the change in consumption by both D.C. residents and suburban residents because of different sales tax rates, both between commodities and jurisdictions. It is generally argued that the imposition of a sales tax by one jurisdiction in a region will create incentives for individuals to purchase exempt goods more and to purchase taxable goods in nontaxing jurisdictions. The potential result is a decrease in sales in the taxing jurisdiction and redistribution of sales toward establishments concentrating in selling tax exempt goods.

These sales changes are a result of the substitution and income effects of tax-induced price changes.

First, the imposition of a sales tax reduces consumers' disposable income and causes changes in the quantities of all goods that consumers purchase, the aggregate effect being a decrease in sales.

Second, assuming that the incidence of the sales tax is at least partially on consumers, the imposition of a sales tax on only some commodities will induce consumers to substitute, to some degree, the exempt goods for taxable goods whose relative price has increased.

Finally, if some jurisdictions in a region do not tax a commodity (as heavily as other jurisdictions), consumers are induced to substitute purchases in the low tax jurisdiction for purchases in the higher tax jurisdiction.

The theoretical effects of these changes in consumption are straightforward. Following the discussion by Levin (1966), one should consider both short and long run effects. Assuming in the short run that the sales tax is at least partially shifted to consumers, the increase in price results in a decrease in purchases of taxed commodities. Since some consumers shift their purchases to the low tax jurisdictions, there is an increase in demand for commodities in the low tax areas with a resulting increase in the quantity sold and price (assuming an upward sloping supply curve in the short run). Consequently, sales in the low tax jurisdiction rise.

In the long run, both factors of production and residents can move.

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[1] This may not be as good an approximation for some local governments as for others. For example, Alexandria City levies sales taxes on transient accommodations and restaurant meals in addition to the 3 percent Virginia State tax and the 1 percent local government general tax.

One can then expect further decreases in purchases in the taxing jurisdiction because of decreases in supply and/or demand. In the low tax jurisdictions, however, one expects population inflows and/or changes in firm location resulting in further increases in purchases in the low tax areas.

From the point of view of a central city with a higher tax rate than the surrounding suburbs, the importance of the city-suburb substitution depends on the degree to which individuals are able to or are induced to substitute purchases outside the city for purchases in the city. In considering the entire price of a purchase in a spatial context, individuals must also consider transportation cost. An individual will be induced to purchase a commodity in the low tax jurisdiction only if the difference in price is not eclipsed by extra transportation cost. Tax savings are directly proportional to product cost, that is the net of tax price, while transportation cost is usually related to distance or travel time rather than price. Consequently, the incentive to substitute suburban for city purchases will be greater the higher the net of tax price, *ceteris paribus*.

The transportation cost issue can also be important when one considers the possibility of multipurpose trips. For example, individuals who commute to the city from the suburbs to work may find it much easier to shop in the city, given that they are already there, rather than making a separate trip in the suburbs. It is not clear in that case that a relatively small disadvantageous tax rate differential in the city would induce these individuals to substitute suburban purchases. On the other hand, those individuals for whom special city trips are needed to make a purchase are very likely to be affected by a small rate differential.

One other potentially significant problem with local sales taxes in a metropolitan area arises because a resident who makes a purchase from an establishment in another jurisdiction for delivery to his residence is exempt from sales tax liability imposed by the establishment's local government. Such an individual is, however, subject to a use tax imposed by his own local government. Because the costs of administering such a use tax on many commodities may be high, an individual can sometimes not pay sales tax by this method. The importance of this effect depends upon delivery cost relative to the potential sales tax savings, upon the variety of goods offered in different jurisdictions, and upon the feasibility of administrative arrangements to collect use taxes.

Local sales taxation in a metropolitan area also poses special problems concerning tax equity evaluation. Generally, some of the central city's sales tax will be paid by area residents from outside the city and by visitors from other regions or nations. This fact must be considered when determining the sales tax burden on city residents and also raises other concerns about the opportunity for extending the city tax to city users rather than residents. Finally, the fact that some of the city sales tax may be "exported" can affect the evaluation of alternative strategies to improve the vertical equity of the tax, through exemptions or credits, for example.

All of these general conceptual ideas about equity and efficiency are considered quantitatively and specifically for the D.C. metropolitan area in the following two sections.

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III. Efficiency Aspects of the District of Columbia Sales Tax

This section presents some evidence relevant to the tax effects on consumption discussed in section II.

A. *Sales losses due to tax rate differentials*

The issue is: to what extent does the difference in sales tax rates between the District and the suburbs induce both District residents and suburban residents to make fewer purchases in the city? Although this general question has been considered in some previous research, many of these studies were beset with theoretical problems and severe data limitations so that the reliability of these results is not great.[2] The most recent study in this area, however, is based on a rich data set and thus these results should be discussed.

Mikesell (1970) undertook a cross-section analysis of 173 central cities in SMSA's. Mikesell regressed per capita city sales on per capita city income, the fraction of SMSA population in the city, city area, and a sales tax rate differential variable, T, which is defined as $T=(1+t_c)/(1+t_s)$, where t_c=city sales tax rate, and t_s=suburban sales tax rate.[3] Mikesell found that each 1 percent change in the tax rate differential variable resulted in a decrease in per capita city sales of about 6 to 7 percent.[4]

There is unfortunately no previous analysis of this issue specific to the District. The District of Columbia Department of Finance and Revenue has studied changes in District retail trade between 1967 and 1972 and has compared those changes with other cities. That research is not particularly helpful in considering the effects of the sales tax on total sales because over those years there was no significant variation in tax rates between the District and the suburbs (see table 4). In fact, because there was no tax differential during this period, the research does indicate the problem the District faces in using retail sales as a tax base regardless of the rate differential. Over those 5 years, retail trade in the District increased by only 12.2 percent despite an increase in city per capita disposable income of about 42 percent. In comparison, retail trade in the suburbs increased by nearly 84 percent during those 5 years so that the District's share of area retail trade fell from 33.9 percent in 1967 to 23.8 percent in 1972. There are clearly numerous factors contributing to this situation, including decreases in the District's population, changes in transportation networks, changes in consumer buying habits, and changes in location of retail shops.

It would be desirable to undertake a statistical analysis of sales tax effects on District sales. This study would preferably be a time series analysis of changes in D.C. sales, in aggregate and perhaps for some commodities, considering the effects of changes in the sales tax rate differential between the District and the suburbs. A basic difficulty is the choice of a proper dependent variable. The effect of intergovern-

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[2] For example, see Hamovitch (1966) and Levin (1966). Both studies found that tax rate differentials between New York City and its suburbs did cause sales losses in the city.

[3] For central cities with several suburbs, T is an average of the tax rate ratios weighted by the income shares of each suburb in the SMSA.

[4] Mikesell reports a coefficient on T of -6.33 with a standard error -2.52. He reports "a probability of approximately 95 percent that the loss of per capita city sales from a 1 percent change in the sales tax variable will be between 1.69 and 10.97 percent."

mental rate differentials and the absolute tax rate on total sales is best if one is concerned with sales loss. That is, while the tax will cause exempt goods to be substituted for taxable goods, this is not a loss of sales to the jurisdiction. Alternatively, one can consider the effects of the tax on aggregate taxable sales or total sales of specific commodities. In both cases, a sales tax or a tax rate differential that reduces taxable sales (or sales of one commodity) will overstate the sales loss to the jurisdiction. Because of data limitations I must take the second alternative and consider the sales tax effects on taxable sales or revenue. One desires to measure the substitution of exempt goods for taxed goods, the substitution of suburban purchases for city purchases, and the effect of income changes on sales.

B. A general sales tax model

In order to statistically test whether sales tax rate differentials in the Washington metropolitan area affect sales and sales tax collections in the District, it is necessary to adopt a general model describing the sales tax. The model presented by Friedlaender, *et al.* (1973), is easily adapted for this purpose. This model allows one to estimate revenue elasticities with respect to prices and income and thus provides a direct test of the revenue loss hypothesis through measurement of the revenue elasticity with respect to the city-suburb rate differential.

Represent the city sales tax revenue from the ith base as

$$R_i = t_i C_i \tag{1}$$

where

R_i=sales tax revenue of the ith base
t_i=tax rate on i^{th} base
C_i=taxable consumption i

Standard microeconomic consumer theory suggests that consumption will depend upon income, tastes, and the relative prices of commodities. Assume then that taxable consumption i is a multiplicative function of income, the price of commodity(ies) i in the city relative to the price of other commodities in the city, and the price of commodity(ies) i in the city relative to the price of commodity(ies) i in the suburbs.
Thus

$$C_i = AI^{a_1}\left[\frac{P_{ic}(1+t_{ic})}{P_{jc}}\right]^{a_2}\left[\frac{P_{ic}(1+t_{ic})}{P_{is}(1+t_{is})}\right]^{a_3} \tag{2}$$

The ith base can be one commodity group (food consumed at home) or an aggregate (all commodities taxed at the general rate, for example). In both cases this consumption function is for a composite good and thus the elasticities are also composite elasticities.

Of particular interest is the relative price of city versus suburban goods. Assuming constant returns to scale and competitive factor markets in the metropolitan area, the city-suburb price difference depends only on the tax rate difference, that is $P_{ic}=P_{is}$. Because the District competes with two suburban areas, the tax rate differential is assumed to be the average of the differential between the District and each suburb.

Thus

$$T=\frac{1}{2}\left[\frac{1+t_c}{1+t_m}+\frac{1+t_c}{1+t_v}\right] \tag{3}$$

where

T=tax rate differential variable
t_c=D.C. tax rate
t_m=Maryland suburb tax rate
t_v=Virginia suburb tax rate

Combining equations (1), (2) and (3),

$$R_i=t_iA_iI^{a_1}\left[\frac{P_{ic}(1+t_{ic})}{P_{jc}}\right]^{a_2}[T_i]^{a_3} \tag{4}$$

The elasticity of sales tax revenue with respect to several variables is easily determined from (4). Let E^k be the revenue elasticity with respect to k^1. Then

$$E_I=a_1$$
$$E_{P_{ic}/P_{jc}}=a_2$$
$$E_{T_i}=a_3$$
$$E_{t_i}=1+\frac{t_i}{1+t_i}(a_2+a_3)$$

There are several problems with this general model. First, as noted by Shapiro and Legler (1973), one would expect that changes in other taxes would also affect sales tax revenue. Changes in income taxes, for example, are expected to affect consumption. Thus it is not exactly correct to estimate tax elasticities for one tax without specifying some interaction. Alternatively one can assume that these intertax effects are small so that they may be ignored. Second, the relative city price variable between commodities presents a problem because not all commodities are taxed at the same rate, so that the proper calculation of a price index for commodities other than those in the ith base depends upon other tax rates. For example, if the ith base were all commodities taxed at the "general" sales tax rate, then calculation of this relative price term must consider that some commodities are not taxed while others are taxed at varying rates different from the general rate. In practice, of course, any price series used to calculate this relative price term will include the taxes so that their separate effects on relative prices cannot be identified.

C. Empirical results: Revenue elasticities and a test of the rate differential hypothesis

Equation (4) was estimated in logarithmic form for the general tax rate base, for food consumed at home and for approval over the years 1962–76. (The data, along with explanations of collection and calculation methods, are given in the appendix.) A relative price term was initially used for food and apparel but was not significant in any use (see tables A–4, A–5). Because of the small sample size this term was dropped. The initial one stage least squares estimates were usually biased by autocorrelation (note the low Durbin-Watson statistics). Thus the Cochrane-Orcutt interative technique was used to calculate

the first order autocorrelation coefficient and to provide the corrected regressions. Discussion below refers only to the Cochrane-Orcutt estimates. Thus the final form for estimation was:

$$\ln R_i = C + a_1 \ln PI + a_2 \ln t_i + a_3 \ln T_i + \ln V_i \qquad (5)$$

where

V_i=error term;
C=constant;
PI=personal income;
R_i, t_i, T_i as previously defined.

The results for (5) are presented in tables 5–8. Does a sales tax rate differential between the District and the suburbs cause a loss (or gain) of sales in the District? The results of these tests are ambiguous.

Food results: Consider the results for food presented in Tables 7 and 8.[5] The tax rate differential variable is negative and significantly different from zero. Thus it appears that a sales tax rate differential on food does cause changes in where consumers purchase food. For every 1 percent rise in the tax rate differential variable (recall that means a 1 percentage point change in t_c vs. t_s) with the D.C. rate on food constant, there is about a 7 percent decrease in the Districts sales tax revenue from food. Thus, when food was taxed at 2 percent in the District of Columbia, if Virginia had lowered its food rate also to 2 percent (so that T rises by 1 percent), then the District of Columbia would have experienced about a 7 percent fall in food tax revenue excluding changes due to economic growth. On the other hand, when the District made food exempt from sales taxation, the sales tax rate differential fell by 2 percent (from $T = 1.00$ to $T = .98$). Thus one expects that there would be an increase in food sales in the District, perhaps by as much as 14 percent, excluding other economic factors. Of course there is no gain in tax revenue since $t = 0$.

[5] The year 1976 posed a special problem for the food tax analysis because food was made tax exempt in that year. Thus two estimates are made for food, one with estimated 1976 food revenue if food had been taxed at 2 percent all year, reported in table 7, and one considering only the years 1962–1975, reported in table 8. There is no significant difference in the results.

DEFINITION OF VARIABLES

C—constant term.
LPID—natural log of personal income.
LRATE—natural log of general rate.
LTDIF—natural log of general tax rate differential.
LRATEF—natural log of food rate.
LTDIFF —natural log of food tax rate differential.
SCD—shopping center opening dummy variable.
DUM—general rate base change dummy variable.

TABLE 5.—SALES TAX ELASTICITIES MEASURED FOR GENERAL RATE, REVENUE AS THE DEPENDENT VARIABLE

Equation No.	C	LPID	LRATE	LTDIF	SCD	DUM	
			OLSQ				
1	*18.30	0.18	*1.28				R^2 =0.97
	(4.64)	(1.06)	(7.02)				DW= .55
2	*18.59	.17	*1.31	−0.21			R^2 = .97
	(4.65)	(.99)	(6.98)	(−.86)			DW= .65
			Cochrane-Orcutt				
3	*14.44	*0.32	*0.90				R^2= .99
	11.11	(5.46)	(13.18)				DW=1.97
4	*14.50	*.32	*.91	−0.51			R^2= .99
	(9.43)	(9.69)	(11.12)	(−.37)			DW=1.90
5	*14.29	*.32	*.89	−.53	−0.014		R^2= .99
3	*14.44	*0.32	*0.90				R^2 = .99
	(11.11)	(5.46)	(13.18)				DW=1.97
4	*14.50	*.32	*.91	−0.51			R^2 = .99
	(9.43)	(4.69)	(11.12)	(−.37)			DW=1.90
5	*14.29	*.32	*.89	−.53	−0.014		R^2 = .99
	(8.13)	(4.29)	(8.97)	(−.30)	(−.23)		DW=1.96
6	*13.87	*.35	*.90			0.02	R^2 = .99
	(9.54)	(5.18)	(12.47)			(.61)	DW=2.13
7	*13.84	*.35	*.93	−1.14		.02	R^2 = .99
	(8.61)	(4.91)	(10.40)	(−.79)		(.83)	DW=2.11

*Significant at the 95 percent level of confidence.

Note: t statistics in parenthesis; DW—Durbin-Watson statistics.

TABLE 6.—SALES TAX ELASTICITIES MEASURED FOR APPAREL, REVENUE AS THE DEPENDENT VARIABLE, 1962–76

Equation No.	C	LPID	LRATE	LTDIF	SCD	
			OLSQ			
1	**9.97	**0.48	*1.06	−4.38		R^2 =0.97
	(1.96	(2.18)	(4.27)	(−1.26)		DW=1.29
2	**10.97	**.44	*1.12	−4.03	0.04	R^2 = .97
	(2.05)	(1.89)	(4.24)	(−1.12)	(.76)	DW=1.47
			Cochrane-Orcutt			
3	7.88	*0.56	*0.91	−3.23		R^2 = .97
	(1.49)	(2.44)	(3.22)	(−.73)		DW=1.72
4	8.38	**.54	*.94	−3.36	0.08	R^2 = .97
	(1.37)	(2.07)	(2.75)	(−.73)	(.16)	DW=1.75

*Significant at the 95 percent level of cofidence.
**Significant at the 90 percent level of confidence.

Note: t statistics in parenthesis; DW—Durbin-Watson statistics.

TABLE 7.—SALES TAX ELASTICITIES MEASURED FOR FOOD, REVENUE AS THE DEPENDENT VARIABLE, 1962–1976—OLSQ

Equation No.	C	LPID	LRATEF	LTDIFF	
1	*8.14	*0.53	*0.78	----------	R^2 =0.97
	(2.49)	(3.73)	(6.66)	----------	DW=1.56
2	*12.01	*.36	*.87	**−7.10	R^2 = .98
	(3.53)	(2.35)	(7.81)	(−2.12)	DW=2.41

*Significant at the 95-percent level of confidence.
**Significant at the 90-percent level of confidence.

Note: DW—Durbin-Watson statistics; t statistics in parenthesis.

TABLE 8.—SALES TAX ELASTICITIES MEASURED FOR FOOD, REVENUE AS THE DEPENDENT VARIABLE, 1962–75

Equation No.	C	LPID	LRATEF	LTDIFF	
			OLSQ		
1	**6.09	*0.63	*0.74	----------	R^2 =0.97
	(1.62)	(3.75)	(5.90)	----------	DW=1.80
2	*11.17	**.40	*85	**−6.60	R^2 = .98
	(2.43)	(1.90)	(6.37)	(−1.69)	DW=2.43
			Cochrane-Orcutt		
3	**7.94	*0.55	*0.78	----------	R^2 =0.97
	(1.68)	(2.56)	(5.35)	----------	DW=1.96
4	*11.23	**.39	*.84	**−7.17	R^2 = .98
	(2.57)	(1.97)	(6.90)	(−2.09)	DW=2.20

*Significant at the 95-percent level of confidence.
**Significant at the 90-percent level of confidence.

Note: t statistics in parenthesis; DW—Durbin-Watson statistics.

The results for food show two other relevant elasticities, with respect to the tax rate and with respect to personal income. A 1-percent increase in the tax rate, with all other factors constant including the rate differential, results in slightly less than a 1-percent increase in revenue. This is expected because a relative price term for food and other (nontaxable) commodities is missing causing the rate elasticity to fall below its expected value of one. This effect on revenue is separate from and in addition to the effect from changes in the rate differential. For example, suppose the District had raised the rate on food from 2 percent to 3 percent and that the tax rates in the suburbs were not changed. From the 1-percent increase in the rate differential there should be a 7 percent fall in revenue, while from the 50-percent increase in the rate there should be about a 42-percent increase in revenue.[6] The net effect of the increase in the food tax rate should then be about a 35-percent increase in food sales tax revenue. Revenue increases by a smaller percentage than the rate both because consumers buy less food and because some consumers shift their food purchases out of the District.

General rate commodity results: The results for commodities taxed at the general rate shown in table 5 are somewhat different. Although the tax rate differential variable coefficient is negative in each case, it is not significant in any case. Therefore, these tests do not allow us to reject the idea that changes in the general sales tax rate do not cause consumers to change the location of purchases in aggregate.

The results reported in table 5 show revenue elasticities with respect to the general rate ranging from .89 to .91. Thus, it is expected that an increase in the general rate of 1 point, for example from 5 percent to 6 percent (a 20-percent increase), would provide about an 18-percent increase in revenue excluding economic growth effects.[7]

One problem with the general rate tests is that the commodities taxed at the general rate changed during the 15-year time period of this study. The basic change was that prior to 1970, restaurant meals and alcoholic beverage sales were taxed at the general rate while starting in 1970 they were taxed at different rates. Thus the equations were reestimated including a shift variable equal to one for the years 1962–69 and 0 for the years 1970–76. These results in table 5 are not significantly different.

Considering the general sales tax rate, one can also test whether the location of major shopping centers in the suburbs adversely affects sales tax revenue in the District. Variable SCD is used to account for the special years in which a major new shopping center opened in the suburbs. SCD was assigned a value of one for 1965 (opening of Landmark) 1968 (opening of Tysons Corners and Montgomery Mall), and 1972 (opening of Landover Mall). This test provides no evidence of immediate revenue losses because of the shopping centers. This does not imply that there is no long-run effect on sales tax revenue as both consumers and retailers relocate.

Apparel results: These results reported in table 6 are, as expected, very similar to those for the general rate because apparel is an important commodity taxed at the general rate. Again the tax rate differential coefficient is negative but not significant providing no evi-

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[6] More exactly, for a 50-percent rate increase, $(1.5)^{.87}=1.423$ or a 42.3 percent increase in revenue.

[7] $(1.2)^{.91}=1.18$.

dence of sales shifts between the city and the suburbs. Note also that the revenue elasticity with respect to personal income is higher for apparel than for the composite of all commodities taxed at the general rate. This makes sense because apparel consumption is known to be income elastic.[8]

One final comment about these tests. The revenue elasticities with respect to income should not be interpreted as pure income elasticities. Changes in personal income include effects from population changes and inflation.

D. Use taxes and the possibility of revenue loss

The second efficiency issue concerning local sales taxes is the possibility that some individuals will be able to evade sales taxes by buying in one jurisdiction and taking delivery in another. In this case the nonresident is exempt from the sales tax in one jurisdiction and, while liable for a use tax in his jurisdiction of residence, administrative difficulties sometimes make collection impossible. In addidtion to the tax revenue lost by all jurisdictions in this manner, there are possible net sales gains or losses to jurisdictions because all individuals have an incentive to purchase some goods in other jurisdictions.

TABLE 9.—NON-TAXABLE SALES AS A PERCENTAGE OF TOTAL SALES, DISTRICT OF COLUMBIA, BY INDUSTRY GROUP

Business class	1976
Furniture and applicances	69.4
Furniture	63.5
Appliances	58.8
Office equipment	74.7
Music, television	61.9
Apparel	6.9
General merchandise	32.5
Department stores	11.5
Automotive	79.3
Motor vehicle dealers	80.4
Contractors	79.2

Source: District of Columbia Department of Finance and Revenue, "Summary of Sales and Use Tax Returns for Fiscal Year 1976," November 1976.

A quick glance at table 9 shows that for some establishment types nontaxable sales comprised more than 50 percent of total sales in 1976. This can occur either because these establishments sell nontaxable commodities or because some purchasers are nonresidents. It appears likely that in some cases, the furniture and appliance group especially, nonresident tax exempt purchases are significant. This should not be considered a problem from the point of view of the District since the District has no legal authority to collect taxes on these sales. Rather, this evidence suggests substantial purchases in the District by nonresidents.

Of greater concern to the District is the possibility of both sales and revenue losses if D.C. residents can evade sales taxes by buying in the suburbs. Through a series of administrative agreements between the District's Department of Finance and Revenue and retailers this possibility has been decreased significantly. Retailers who do business both in the District and in the suburbs do collect and remit D.C. sales taxes from District residents who purchase goods in the suburbs for D.C.

[8] Schaefer [1968], p. 521.

delivery. Since many of the largest metropolitan area retailers in the general merchandise, furniture, and appliance groups are in this category, the District seems to be collecting the maximum feasible revenue.[9]

IV. Equity Issues

The traditional criticism of sales taxes from an equity point of view is that the distribution of tax burden between income classes, measured by the percentage of income paid as tax, is regressive or at best proportional. Thus it is argued that the vertical equity of the sales tax is less than desired by society's norms. To improve the progressivity of a sales tax, some commodities which are believed to be income inelastic can be exempted from the tax or an income tax credit can be used to offset some portion of sales tax liability for lower income families.

It has been suggested that income may not be the best measure of a taxpayer's ability to pay. If one has this belief, then sales tax effective rates measured as the percentage of income paid as tax are not a good measure of vertical equity. Rather, one might argue that consumption is a better tax base than income in which case one would prefer to calculate effective rates as the percentage of consumption paid as tax.

One can also evaluate a broad-based sales tax by the horizontal equity criterion, asking whether taxpayers with equal ability to pay actually bear equal tax burdens. For example, two families with equal incomes need not pay the same sales tax because their tax burden depends upon their choices of purchasing taxable or nontaxable commodities and of consuming or saving.

In this section, each of these issues is considered both by reviewing the results of previous research and by providing estimates specific to the District of Columbia.

A. Vertical equity

Many researchers have calculated the effective rates[10] by income class for various broad-based sales taxes. Pechman (1977) reports that the effective rates of a 5 percent retail sales tax (including food) range from 3.8 percent for families with income less than $3,000 to 1.2 percent for families with income above $100,000. He finds the burden distribution to be nearly proportional between $3,000 and $20,000 of income and regressive at other levels. Papke and Shahen (1972) report effective rates for each 1 percent of a broad-based sales tax, concentrating on the burdens for families with incomes less than $15,000. The sales tax (including food) is found to be nearly proportional for family incomes between $2,000 and $7,500 and regressive over larger income ranges.

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[9] For example, among general department stores, Sears, Roebuck & Co., the Hecht Co., Woodward and Lothrop, and Hechinger's maintain stores both in the District and in the suburbs. Thus, D.C. residents cannot avoid sales taxes through purchases in these suburban outlets.

[10] Effective rate refers to the tax liability as a percentage of income.

Much previous research has also suggested the effects on effective rates of exempting some commodities. Both Pechman and Papke and Shahen report that exempting food from the sales tax makes the tax approximately a proportional one, except for the very low and very high income levels. In a study of the equity effects of sales taxes on various commodities in the State of New Jersey, Schaefer (1968) reports that "exempting food consumed at home changes what would be classified as a regressive levy into one which is proportional for most New Jersey households." [11] Schaefer's study also provides valuable information about the effects of exempting commodities other than food consumed at home. He finds that including clothing in the tax base causes the tax to be more progressive than it would otherwise be. Also, expenditures on food consumed in restaurants and on alcoholic beverages are about proportional to income, so that a sales tax on these expenditures would result in tax burdens also proportional to income. This is, of course, important for an analysis of the District's sales tax since both alcoholic beverages and restaurant meals are taxed at rates higher than the general rate.

The Papke and Shahen study also presents information about the vertical equity effects of income tax credits used to reduce sales tax regressivity or to offset sales taxes on food. Comparing equal yield sales tax structures, they find that all the credit schemes examined make the sales tax more progressive than a food exemption, with a vanishing credit variable by both income and family size making the tax most progressive. In other words, for equally progressive structures, less revenue is collected if an exemption is used rather than a credit.

Using preliminary data from the U.S. Department of Labor Consumer Expenditure Surveys for 1972 and 1973 it was possible to make rough estimates of effective rates of various D.C. sales taxes. In table 10, the aggregate effective rates of different sales tax structures in the District are presented. The effective rates for the current structure include the 5-percent general rate, the 6-percent rate on alcoholic beverages, and the 8-percent rate on restaurant meals.[12] As expected, the current sales tax structure results in a regressive distribution of tax burden over the entire income range and an approximately proportional distribution between incomes of $5,000 and $15,000.

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[11] Schafer [1968], p. 521.

[12] It was not possible to include the 12-percent rate on parking because parking expenditures were not presented separately in the survey results. Also, the tax on transient accommodations was not included since this is likely to impose no burden on District residents. These effective rates are based on the assumption that a District resident purchases all of these commodities in the District of Columbia. If a resident makes some of these expenditures outside the District and does not pay the D.C. use tax., these effective rates would be lower, although the D.C. tax would usually be supplanted by another sales tax. Only if the propensity to consume outside the District varies by income class will the relative effective rates (regressivity) be altered.

TABLE 10.—EFFECTIVE RATES OF THE DISTRICT OF COLUMBIA SALES TAXES[1]

[In percent]

Income class	Current base and rates[2]	Current structure with 2 percent food tax	Current structure, food taxed, credit[3]	Current base, 5.5 percent general rate
0 to 2,999	3.5	4.2	3.7	3.8
$3,000 to $3,999	2.2	2.7	2.4	2.3
$4,000 to $4,999	2.0	2.4	2.3	2.1
$5,000 to $5,999	1.8	2.2	2.1	2.0
$6,000 to $6,999	1.7	2.0	2.0	1.9
$7,000 to $7,999	1.7	2.0	2.0	1.9
$8,000 to $9,999	1.6	1.9	1.9	1.7
$10,000 to $11,999	1.5	1.8	1.8	1.7
$12,000 to $14,999	1.5	1.7	1.7	1.6
$15,000 to $19,999	1.4	1.6	1.6	1.5
$20,000 to $24,999	1.3	1.5	1.5	1.4
$25,000 and up	1.0	1.1	1.1	1.0

[1] Based on preliminary data from the U.S. Department of Labor Consumer Expenditure Surveys for 1972 and 1973.
[2] Includes 5 percent general rate, 6 percent rate on alcoholic beverages, and 8 percent rate on restaurant meals.
[3] Credits applied were those in effect in 1974: For income $\leq$\$2,000 the credit is \$6 per income tax dependent, for \$2,000 $<$income $\leq$ \$4,000 the credit is \$4 per dependent, for \$4,000 $<$income$\leq$\$6,000 the credit is \$2 per exemption, and for income $>$\$6,000 the credit is zero.

These effecive rates can be compared with those if the current structure included a 2-percent tax on food consumed at home or if the food tax were combined with an income-tax credit at the amounts used by the District in 1974. Not only are the effective rates lower for every income class when food is exempt compared to when it is taxed, but the distribution of effective rates is significantly less regressive. When food is taxed at 2 percent and the income-tax credit is included, the effective rates are lowered for those classes subject to the credit compared to the no credit case. For the current year, however, the structure with the 2-percent food tax would generate about $7 million more in revenue than the current structure while the structure with the 2-percent food tax and the credit would be expected to increase revenue by slightly more than $6 million compared to the current structure. Given the revenue difference, the distribution of tax burden is slightly less regressive if food is exempt than if food is taxed and the credit applied. The credits per person that would be necessary to reduce the effective rates for the income classes below $6,000 to those that obtain if food is exempt range from $8.18 to $9.19.[13] If one desires to reduce the effective rate of each lower income class to the same level as if food were tax exempt, then there is no reason for the amount of the credit to fall as income rises. This happens because even though food expenditures increase with income, family size also tends to be higher at higher income levels (see tables A–6, A–7). Therefore, this approach to the use of a credit simply requires a decision about how high an income level society desires to protect from the food tax.

One important problem with these comparisons is that unlike the Papke and Shahen analysis previously discussed, sales tax revenue is not held constant for the three different tax structures. A better comparison, then, is the effective rates when food is exempt and when food is taxed and the credit allowed, holding revenue constant. Table 10 compares the effective rates if food were taxed at 2 percent and the

[13] These credits are based upon the average family size by income classes reported in the Consumer Expenditure Survey. See the appendix tables. It is assumed that the tax rates are not altered so as to equalize tax collections. These credits are 0—$2,999, $8.44; $3,000–$3,999, $8.18; $4,000–$4,999, $8.28; $5,000–$5,999, $9.19.

1974 credit applied with the effective rate with food consumed at home exempt and the general rate equal to 5.5 percent so that both structures provide the same revenue.[14] The structure with food taxed at 2 percent and the credit applied is more progressive than an equal yield structure with food exempt, although for most classes the effective rates are nearly the same.

The progressivity could be increased still more by using larger credits for the low-income groups. One should recognize, however, that the comparison of effective rates depends on how an equal revenue yield is obtained. For example, rather than increasing revenue by the food tax and credit combination, one can raise the general rate with food exempt, as in the above example, or one can raise the rates on alcoholic beverages, restaurant meals, and/or transient accommodations, or one can extend the tax base to services, or one can even raise other District taxes such as the income tax. Depending on which alternative is considered, the comparison of tax equity will vary.

In the Commission staff report "Taxing Nonresident Income," Wilensky shows the effective rates if food were taxed at the 5 percent general rate and a credit ranging from $15 to $5 were used. She notes that this structure would be more progressive than the current food exempt structure while adding at least $12 million to revenues. One should be careful, however, to distinguish between the progressivity of a tax and its absolute level of burden. Wilensky's structure is more progressive than the current one although, in addition, all income classes above $3,000 have higher effective rates. If one is concerned with the equity of the overall D.C. tax system rather than with each tax separately, than one should recognize that the $12 million revenue gain could be achieved and the overall tax system made more progressive than with a food tax and credit scheme if the D.C. personal income tax were increased.[15] Similar arguments can be made for adjustments of other D.C. taxes as well as for changes in D.C. expenditures. There need be no requirement that each tax or expenditure program be perfectly equitable for the entire revenue or expenditure system to be fair.

The Consumer Expenditure Survey data also provide information about the equity effects of the higher tax rates on restaurant meals and alcoholic beverages and of the sales tax exemption for laundry and dry cleaning expenditures. Table 11 presents consumption expenditures as a percentage of family income for several commodity groups. Over most of the income range (excluding only the lowest and highest classes), expenditures for restaurant meals and alcoholic beverages are nearly a constant proportion of income. Thus sales taxes on these goods should be nearly proportional, assuming that District residents make all these purchases in the District or pay District use taxes. On the other hand, expenditures for laundry and drycleaning decrease as a percentage of family income as income rises. Therefore, the exemption of laundry and drycleaning expenditures from the sales tax serves to reduce the regressivity of the tax.

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[14] The 2-percent food tax is estimated to provide $7.2 million in revenue and Wilensky ("Taxing Nonresident Income," Commission staff report) estimates the cost of the credit at $820,000. The net revenue increase expected is thus $6.4 million, that is a 9-percent increase in revenue from the general rate. An increase in the general rate of 10 percent (from 5 percent to 5.5 percent) is expected to increase revenue by 9 percent.

[15] The D.C. personal income tax is very much more progressive than the current sales tax is regressive. See Statistics on District of Columbia Income, Calender Year 1974 Returns, Department of Finance and Revenue, June 1976, p. 7.

TABLE 11.—CONSUMPTION EXPENDITURES AS A PERCENTAGE OF FAMILY INCOME, 1972 AND 1973

Income class	Food at home	Food away from home	Alcoholic beverages	Laundry and dry cleaning
0 to $2,999	58.0	2.9	1.6	3.0
$3,000 to $3,999	24.8	1.7	1.0	1.8
$4,000 to $4,999	21.6	1.4	.9	1.3
$5,000 to $5,999	18.6	1.7	1.0	1.3
$6,000 to $6,999	16.1	1.5	.8	1.2
$7,000 to $7,999	15.0	1.6	.9	1.0
$8,000 to $9,999	13.4	1.5	.8	.9
$10,000 to $11,999	12.5	1.6	.7	.8
$12,000 to $14,999	11.1	1.5	.7	.6
$15,000 to $19,999	9.8	1.4	.6	.6
$20,000 to $24,999	8.6	1.4	.6	.5
$25,000 and up	5.3	1.1	.5	.4

Source: "Consumer Expenditure Survey Series: Interview Survey, 1972 and 1973," U.S. Department of Labor, Bureau of Labor Statistics, 1976.

B. Horizontal equity

This alternative equity criterion applied to a broad-based sales tax asks whether families with equal incomes pay equal amounts of sales tax. Families in the same income class will pay different amounts of sales tax if (i) total consumption varies between equal income families or if (ii) the consumption of taxable goods varies within income classes. One important economic reason why both of these conditions should be true is that current consumption depends on lifetime income rather than current income only. One usually expects this effect to be very important at the lower income levels. For example, one can compare the consumption of two relatively low-income families, one of which is a retired couple and one of which is a young married couple. The young couple may be consuming much more than the older couple on the expectation of higher future incomes.

Papke and Shahen (1972) compare the effects of income-tax credits and commodity exemptions on horizontal equity, measuring horizontal equity by the variation in effective tax rates within each income class. They report that all credit schemes except a uniform per capita credit [16] reduce horizontal equity compared to a food exemption. The uniform per capita credit provides about the same horizontal equity as the food exemption. Vanishing credits increase the within-class variation in effective rates significantly compared to a food exemption. The reason for a horizontal equity preference for the exemption rather than a credit is obvious. When food is exempted, a family benefits only to the degree that they consume food. On the other hand, a credit reduces the tax burden of individuals with equal income by the same amount regardless of their consumption or tax liability.

C. More on credits versus exemptions

To make a complete comparative evaluation of tax credits and commodity exemptions as mechanisms to improve equity, it is necessary to discuss three other criteria.

First, credits and exemptions differ substantially in their allocative effects. As suggested in the discussion of horizontal equity, an exemption is designed to offset the tax on that particular commodity while an income-tax credit reduces tax liability for all individuals subject to the credit regardless of which goods they purchase. An income-tax

[16] A constant credit per person available to all families.

credit, even if enacted to compensate for sales taxes, is really no different than a change in the income-tax rate structure. The goal of a credit scheme is to make the overall tax structure more progressive. For example, a low-income D.C. resident was allowed the "sales tax" income-tax credit even if he purchased no food in the District or even if he paid no sales tax at all in the District.[17] Therefore, a tax-credit scheme makes consumers better off by giving them more disposable income. Thus it is expected that these consumers would buy more food because of the higher disposable income. In economic parlance, the tax credit involves only an income effect on consumption.

In comparison, the effect of a food exemption is both to increase consumers' disposable income and to reduce the relative price of food. That is, the price of food relative to the price of taxed commodities is reduced by the exemption. Suppose that with the food exemption a higher general tax rate is imposed so that the same amount of revenue is collected as with the tax-credit scheme. Even if the effect of the general rate increase is to leave low-income consumers with the same disposable income, these consumers will still be expected to purchase more food because food is relatively cheaper. Thus the food exemption involves both an income effect and a price effect.

In some sense then, a food exemption and a tax credit are not substitutes. In fact, if a government has two policy objectives, both to make food less expensive and to increase the progressivity of the overall local tax system, then both can be used simultaneously.

A second criterion to evaluate credits and exemptions, perhaps more important politically than economically, might be called regional equity. If the District uses an income-tax credit to offset sales taxes for some income groups, only District residents (taxpayers) will benefit directly. On the other hand, if the District exempts food from sales taxation, then all buyers of food in the District regardless of residence can benefit. However, the fact that this benefit can be extended to suburban residents might not be considered a disadvantage from the point of view of the District since the lower tax rate on food can cause an increase in sales in the District. Presumably this increase in sales is translated into employment increases and additional tax revenue from sources other than the sales tax. It is of course problematical whether this tradeoff would still involve a net revenue loss to the District. That depends on how many new food buyers are attracted to the District by the food exemption.

Finally, one can compare credits and exemptions in terms of compliance and administrative costs. Credits as alternatives to commodity exemptions have been criticized because of the consumer effort required to claim the credit. At best, this requires additional calculations when one files a District income-tax return. For some, who are usually the most needy, however, a special application will be required if an income-tax return is not required. On the other hand, as more and more commodities are exempted from the sales tax, the general sales tax concept is lost and approaches a group of selected excise taxes. Along with numerous equity and efficiency problems, these exemptions can increase administrative costs of firms, especially if the exempt commod-

[17] While this is of course an unrealistic possibility, it nevertheless does show the effect of a credit.

ities and taxable commodities are usually sold in the same retail establishments.

In sum, a comparative evaluation of tax credits and commodity exemptions requires consideration of vertical equity, horizontal equity, allocative efficiency, compliance and administrative costs, and political issues.

D. Equity effects of sales tax exporting

The discussion of D.C. sales tax equity in this section has assumed that D.C. residents make all purchases in the District and has not considered the extent of sales tax "exporting" from sales to nonresidents. Here I add these new considerations.

As noted, the effective rates given above indicate the vertical equity of the tax if D.C. residents make all purchases in the District or if D.C. residents pay a use tax on other purchases or if all income classes have the same tendency to shop outside the District. In a separate study of the D.C. metropolitan area, Greene, Neenan, and Scott (1974) estimate effective rates of the D.C. sales tax after removing purchases by businesses and sales to nonresidents. Those results are given in table 12. These effective rates compare remarkably well with my estimates so that one might conclude for a rough degree of accuracy tax exporting does not greatly influence vertical equity.

It is true, however, that exporting does reduce the absolute burden of the D.C. sales tax on residents. Note in table 12 that the effective rates are all lower than those in table 10. Greene, *et al.*, estimate that only about 47 percent of the D.C. sales tax is paid by D.C. residents, allocating 25 percent to tourists, 12 percent to other residents of the metropolitan area, and 16 percent to business.[18] Moreover, I estimate that for 1974 at least 80 percent of the D.C. sales tax on alcoholic beverages, restaurant meals, and transient accommodations was paid by other than D.C. residents.[19] The 80-percent figure is based on the assumption that D.C. residents purchase all alcoholic beverages and restaurant meals in the District and all transient accommodations outside. Thus, if D.C. residents do in fact purchase alcohol and restaurant meals elsewhere, the figure should be higher than 80 percent.

TABLE 12.—*Effective sales tax rates for District of Columbia, excluding nonresident purchases*

Income class:	*Effective rate*
0 to $2,999	3.0
$3,000 to $3,999	2.1
$4,000 to $5,999	1.9
$6,000 to $7,499	1.8
$7,500 to $9,999	1.7
$10,000 to $14,999	1.5
$15,000 to $24,999	1.3
$25,000 and up	1.0

Source: Kenneth V. Greene, William B. Neenan, Claudia D. Scott, Fiscal Interactions in a Metropolitan Area (Lexington, Mass.: D.C. Heath and Co., 1974).

[18] As Greene, et al., admit, these are very rough estimates, based largely on an *a priori* assumption that an individual makes 25 percent of his alcohol, tobacco, and sundry expenditures in the jurisdiction where he works.

[19] This figure is obtained by calculating the average tax on these expenditures per family in each income class from the 1972–73 Consumer Expenditure Surveys. These per family taxes were aggregated using the number of income-tax returns for calendar 1974 as a measure of the number of families (adjusted by 26 percent as suggested by Wilensky). This aggregate tax data was then compared with actual collections on these commodities for fiscal year 1975.

While all of these estimates must be interpreted cautiously, even applying a generous confidence interval suggests that the District exports a substantial portion of its total sales tax burden and an even greater proportion of the tax on alcoholic beverages, restaurant meals, and transient accommodations.

V. Revenue Potential

This section presents a qualitative discussion and some estimates of the potential for increases in District tax revenue from changes in sales tax rates and bases. Since it is impossible to consider all options, examination is made of four general areas: (a) changes in the general rate, (b) base and rate changes affecting food, (c) changes in rate on transient accommodations, restaurant meals, and the sale of alcoholic beverages, and (d) changes in the tax rate on parking. In each case, the revenue estimates assume the changes were made for fiscal year 1977 and are thus based on collections in fiscal 1976. The revenue elasticities calculated for food and for the general rate from section III will be used for the estimates and thus they are shown in table 13 for reference.

TABLE 13.—SALES TAX REVENUE ELASTICITIES

Base	Rate elasticity	Rate differential elasticity	D. of C. disposable income elasticity
General rate	*0.91	−0.51	*0.32
Food	*.87	**−7.10	*.36

* Significant at the 95 percent level of confidence.
**Significant at the 90 percent level of confidence.

TABLE 14.—ESTIMATED 1977 REVENUE FROM THE GENERAL SALES TAX RATE [1]

Percentage increase personal income	1977 revenue with 5 percent general rate (millions)	1977 revenue with 6 percent general rate (millions)
0	$74.5	$87.9
5	75.7	89.1
10	76.8	90.2

[1] Based on revenue elasticity with respect to personal income=0.32; revenue elasticity with respect to the rate=0.91. Fiscal year 1976 revenue from the general rate assumed=$74,500,000.

A. General rate

The basic revenue issues concerning the general sales tax in the District are the growth potential from income changes and the possibility of a rate increase. Using the revenue elasticities reported previously, table 14 presents estimates of fiscal year 1977 revenue from the general rate for six different situations. Without a rate increase, growth in District general sales tax revenue will be due to income growth.[20]

[20] Most generally income should encompass both District income and suburban income. Levin [1966] has noted the difficulty of separating these two influences because of colinearity, that is both tend to move in the same way. Thus, these general estimates are based only on District income. In fact, not all District income is expected to be spent in D.C. while suburban income will also spill in.

For example, if D.C. personal income were to increase by 10 percent from 1976 to 1977, the District of Columbia could expect about a 3-percent increase in sales tax revenue from the general 5-percent rate. On the other hand, the District could raise the tax rate from 5 percent to 6 percent, a 20-percent increase in the rate. In that case, the District of Columbia would expect about an 18-percent increase in revenue from the general rate even if there was no income growth. Should income also rise by 10 percent, then the revenue increase could be as much as 21 percent.

This discussion has not considered any effects of changes in sales tax rates by Maryland or Virginia. In fact, Maryland has recently increased its general sales tax rate from 4 percent to 5 percent, effective June 1977. The statistical analysis of section III did not indicate any significant effect on revenue caused by sales tax rate differentials between jurisdictions (although there is a price effect between goods in the city). Even if there were no short term effect of general tax rate differentials, however, one might expect the general tax climate in a jurisdiction to be one factor in the location decisions of retail establishments.

In sum, then, since Maryland is raising its rate, the overall rate differential disadvantage the District now faces will be reduced. Alternatively, if the District were to simultaneously raise the general sales tax rate to 6 percent, the current rate differential situation would be maintained with Maryland and worsened compared to Virginia.

B. Food taxation

The last full fiscal year in which a sales tax was levied on the sale of food for off-premises consumption was 1975 when it is estimated $6.7 million was collected from this source. If the 2-percent tax on food sales had been reinstituted for 1977, the District could have expected revenue ranging from $7 million to $7.3 million from this tax. This would have represented about a 6-percent to 8-percent increase over 1975 collections, (see table 15).

Had the District taxed food at a three-percent rate in 1977, it is estimated the revenue gain would have been in the area of $9 million to $10 million. This calculation includes the effects that the rate increase would have in raising the food tax rate differential between the District and the suburbs. Similarly, if food were taxed at 5 percent, the revenue gain would have been about $14 million.

C. Transient accommodations, restaurant meals, and alcoholic beverages

During fiscal years 1975 and 1976, transient accommodations, restaurant meals, and alcoholic beverage sales were taxed at a 6-percent rate providing about $32.4 million in 1975 and $37 million in 1976. The tax rate on transient accommodations and restaurant sales has been raised to 8 percent for fiscal year 1977 while sales alcoholic beverages for off-premises consumption remain taxed at 6 percent. To consider the potential for additional increases in the sales tax rate on these commodities, one must separately consider the economic circumstances of each.

TABLE 15.—ESTIMATED 1977 REVENUE FROM A SALES TAX ON FOOD, DISTRICT OF COLUMBIA [1]

Percentage increase personal income	Revenue with a 2 percent rate (millions)	Revenue with a 3 percent rate (millions)	Revenue with a 5 percent rate (millions)
0	$7.04	$9.50	$14.01
5	7.17	9.63	14.14
10	7.29	9.75	14.26

[1] Based on revenue elasticity with respect to personal income=0.36; elasticity with respect to rate=0.87. Assumes 1 975 revenue from food taxation at 2 percent=$6,7400,000 and an 11.7 percent increase in personal income between 1975 and 1976. Also based on elasticity with respect to the tax rate differential=−7.1.

Transient accommodations are currently taxed at rates ranging from 4 to 9 percent in the D.C. metropolitan area with the District charging a higher rate than the Virginia suburbs and a lower rate than the Maryland suburbs. It seems likely, however, that these variations in tax rates should have little effect on travelers' decisions about where to stay for two reasons. First, for most travelers to the area the District is the prime center of their trip so that one expects demand will support a higher transient accommodation price in the District. This may be particularly true of business travelers who often face looser budget constraints than vacationers. Second, for the variation in tax rate to affect travelers' location decisions, these individuals must be aware of the rate differences. Unless an individual makes several trips, he is not likely to be aware of the rate differences.[21]

The District's sales tax rate on restaurant sales is now 3 or 4 percentage points higher than in the surrounding jurisdictions. Unlike the transient accommodations case, it is expected that most buyers, being area residents, will be aware of these rate differences. Even so, it is likely that some type of restaurant meals will be affected more by further rate increases than others. For example, considering lunch sales in the District, further rate increases are not likely to cause a city/suburb shift but are likely to cause some shift away from restaurant lunches. On the other hand, leisure time meals may be subject to more location choice.

The effects of changes in the sales tax rates on alcoholic beverages are more difficult to discuss because the prices of these commodities are greatly affected by the alcoholic beverage excise taxes. Thus while the District applies a higher sales tax rate to alcoholic beverages than the suburbs, the District also applies lower excise taxes at least on beer and wine. It is expected that purchases of alcoholic beverages would be very sensitive to price differences because they are homogenous commodities with relatively low transportation cost.[22] Thus the District should consider the overall tax burden on alcoholic beverages of which the retail sales tax is a small part.

[21] When individuals are quoted hotel or motel prices before a trip, they usually do not include information about taxes. This discussion has considered only the tax-rate differential. There are, of course, locational variations in net of tax prices which are expected to play an important role in travelers' decisions.

[22] For many individuals no special trip is necessary to purchase alcoholic beverages either in District or the suburbs regardless of residence. Obvious cases are suburban residents who work in the District and vice versa. Also, it is possible to include alcoholic beverage purchases as a part of another purpose trip because they are basically nonperishable goods.

D. Parking

During fiscal year 1977 the District levies a 12-percent tax on parking and storage of motor vehicles. The surrounding jurisdictions levy no similar tax.

Consider first its likely effects on commuters. For these individuals it is not likely (at least in the short run) that this tax would affect job choice. Thus the effect of the tax and the subsequent increase in parking costs for this group can only be a substitution to transportation modes that avoid or reduce this tax. Thus to the extent that the parking tax affects the relative prices of the different transportation methods, one might expect shifts toward (i) car pooling, (ii) public transportation, or (iii) physical transportation (walking and bicycling). It is not clear, given the variety of public policy goals, how to evaluate such changes. In other words, the parking tax can be evaluated both as a revenue device and as a tool to achieve other policy objectives, that is, less commuter traffic. It should also be noted that if a parking tax causes a substitution toward public transportation, the revenue lost from the parking tax may be offset by revenue gains of the public transportation authority.

The effects of the parking tax on noncommuter trips (call them leisure trips) are likely to be different. For metropolitan area residents considering a leisure trip to the District or within the District, particularly on weekends or in the evenings, the parking tax in the Dstrict may be a significant factor in altering destinations. This might occur because the opportunity to substitute public transportation is less and because there are numerous similar destinations for any given purpose (shopping, entertainment, etc.) trip. For visitors from out-of-town, the District is usually the fixed destination although public transportation alternatives may be attractive if the visitors are aware of parking costs in the District.

This discussion suggests that perhaps some consideration should be given to a more complex sales tax rate structure on parking. Two obvious possibilities from an economic point of view are (i) higher rates during the week than on weekends or (ii) higher rates for long-term parking agreements (month contracts, for example) than for parking periods less than 1 day.[23]

E. Selected services

One other potential source of sales tax revenue to the District is extension of the tax base to currently exempt services. The District currently applies the sales tax to some admissions to public events, principally movie and sports while live performances remain exempt, to the repair of personal property, to copying, mailing and stenographic services, to the rental and cleaning of linens for commercial establishments, and to the parking and storage of vehicles. Major service areas currently exempt from the tax and thus those that present the potential for revenue gain are personal services such as laundry and cleaning, barber and beauty services, photographic and artistic services, and also admissions to live public performances and other amusements.

Estimates of the revenue potential for 1976 from taxing these services at the general rate are presented in table 16. The estimates are based on tax exempt sales by establishment type reported by the D.C.

Department of Finance and Revenue for 1976 and for amusements, on 1972 Census of Selected Service Industries.[24] These estimates are very rough because not all gross sales exempt by these establishment types would be taxable as services. No attempt was made to consider taxing professional services such as medical, legal or insurance services because this seems socially unacceptable and unlikely. These rough calculations indicate that the District did not collect something in the area of $6.5 million in revenues in 1976 by exempting these services from the sales tax.

It is generally argued that including such services in the tax base will make the sales tax more progressive because the demand for services is thought to be income elastic. Indeed Schaefer (1968) reports that including spectator admissions in the tax base improves the progressivity of the tax while, as noted previously, data from the 1972–73 Consumer Expenditure Surveys imply that taxing laundry and drycleaning services makes the tax less progressive (see table 11).

TABLE 16.—ESTIMATED 1976 REVENUE FROM A SALES TAX ON SELECTED SERVICES

Commodity group	Estimated revenue (millions)
Laundry and cleaning shops	$2.4
Barber and beauty shops	.3
Photographers and artists	3.1
Amusements, including admission to live performances and bowling, billiards, golf, and other recreation expenditures	.7

Source: Department of Finance and Revenue, "Summary of Sales and Use Tax Returns for Fiscal Year 1976," November 1976.

It is also possible that broadening the sales tax base to include these services will improve the efficiency of the tax, although this depends upon how the surrounding jurisdictions tax these services and how the demands for these services are related to other goods (see the discussion on optimal sales taxes in the appendix).

F. Some concluding comments

The discussion in this section has been in two parts, sometimes offering specific numerical estimates of revenue potential and sometimes providing a general discussion of the factors that should be considered in such policy decisions. In the first case, the estimates should be considered as approximate measures only while in the latter case one should recognize that only the significant effects of tax change have been considered.

This overview suggests that there is potential, in some cases significant, for additional revenue to be collected through the use of sales taxes. However, the collection of this revenue would involve equity and efficiency costs, so that one must recognize that there is a limit to the revenue potential of sales taxes in the District.

[23] Whether such tax discrimination would be legal is not known by the author.

[24] The reported gross sales exempt for laundry and linen service was combined with the taxable sales since these services were taxed for half of 1976. The gross sales exempt for admission to public events seems very low probably because this category is not broadly defined. Amusement services were collected from the 1972 census and are the sum of receipts for bands, symphony orchestras, entertainment presentations, theater, theatrical services, bowling, billards, golf, and recreation clubs all grossed up to 1976 levels. Finally a revenue elasticity of .95 was assumed.

Appendix

A. Optimal Sales Tax Structure

Several of the issues discussed in this paper, particularly the price effects between goods taxed at different rates and the horizontal equity issue, involve the problem of an optimal sales tax rate and base structure. To the extent that any tax alters relative prices there can be an efficiency loss resulting from changes in consumption. The issue is what tax structure will minimize this efficiency loss (or as it has been called in the literature, excess burden) for any given revenue yield.

Often in the practical discussion of sales taxes there is the presumption that efficiency is maximized if the sales tax applies to a broad base of commodities and services at the same rate. This is in most cases not true. Musgrave and Musgrave note that "As we allow flexibility in the choice between work and leisure as well as in that between products, a relative excise tax on product x need no longer be inferior (in efficiency terms) to a general tax on x and z. * * * It is no longer true, therefore, that a proportional tax on all consumer goods must be preferable to a selective tax." [25]

In fact the optimal structure of commodity taxes depends upon whether it is feasible to tax all commodities and upon various price elasticities. The basic optimal commodity tax results were derived by Ramsey.[26] If it is feasible to tax all commodities, then the optimal set of taxes should cause a constant proportionate change in demand for all commodities. There is almost always at least one good that cannot be taxed. In that case the optimal tax will be proportional only if the demand for the untaxed good is independent of the prices of all the taxed goods, an unlikely occurrence. The conditions applicable to one other common rule of thumb can be derived. The optimal taxes should be inversely proportional to price elasticity if the demands for all taxable goods are independent. Bradford and Rosen note that "the extensive subsequent work (on optimal taxation) has shown how difficult it is to sustain any simple rules for commodity taxation. * * * [27]

Moreover, all of these rules have been derived for a simple closed economy with no externalities and no other tax systems. For example, a small jurisdiction in a large metropolitan area (like the District) cannot set taxes without regard to those in competing jurisdictions without efficiency effects. When, in addition, one considers the great number of taxes used, the variation in their incidence and the predominance of externalities, it would only be coincidence if the optimal sales tax were a proportional tax on all commodities.

B. Data [28]

The data used in the statistical analysis of section III are given in tables A–1 through A–3. The data on sales tax revenue were collected from the annual summary reports of the D.C. Department of Finance and Revenue. From 1962–71 these reports give tax assessed by rate and business type. Beginning in 1972, taxes collected and total taxable receipts by rate and business type are reported.

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[25] Richard Musgrave and Peggy Musgrave, *Public Finance in Theory and Practice,* Second edition, McGraw-Hill, 1976, pp. 469–470.

[26] F. P. Ramsey, "A Contribution to the Theory of Taxation," *Economic Journal* (March 1927).

[27] D. Bradford and H. Rosen, "The Optimal Taxation of Commodities and Income," *American Economic Review* (May 1976).

[28] Mark Maisonneuve assisted with this data collection.

TABLE A-1.—SALES TAX REVENUE

[In millions of dollars]

	From general rate	From food	From apparel
Fiscal year:			
1962	21.60	2.53	3.47
1963	31.53	2.55	4.73
1964	33.30	2.66	4.89
1965	35.67	2.63	5.12
1966	36.24	3.23	5.23
1967	38.40	3.27	5.51
1968	39.63	3.18	5.63
1969	49.40	3.31	6.71
1970	52.52	5.76	7.48
1971	52.72	5.78	9.93
1972	52.00	6.20	9.64
1973	63.04	6.70	11.19
1974	68.30	6.48	11.53
1975	73.75	6.74	11.45
1976	74.55	7.02	11.99

Source: District of Columbia Department of Finance and Revenue.

TABLE A-2.—INCOME, DISTRICT OF COLUMBIA

[In millions of dollars]

	Personal income	Disposable personal income
Fiscal year:		
1962	2,467	2,110
1963	2,581	2,215
1964	2,717	2,363
1965	2,855	2,487
1966	2,971	2,569
1967	3,225	2,790
1968	3,413	2,956
1969	3,555	3,018
1970	3,839	3,252
1971	4,134	3,526
1972	4,455	3,777
1973	4,721	4,003
1974	5,093	4,288
1975	5,589	4,782
1976	6,132	5,341

Source: U.S. Department of Commerce, Bureau of Economic Analysis, "Survey of Current Business," August 1974 and August 1975.

TABLE A-3.—TAX RATE DIFFERENTIAL VARIABLES

	General differential	Food differential
Fiscal year:		
1962	1.007	1.010
1963	1.015	1.010
1964	1.015	1.010
1965	1.015	1.010
1966	1.015	1.010
1967	1.000	.995
1968	1.000	.995
1969	1.003	.991
1970	1.000	.997
1971	1.000	1.000
1972	1.000	1.000
1973	1.007	1.000
1974	1.010	1.000
1975	1.010	1.000
1976	1.010	1.000

Note: Differential $=T=\frac{1}{2}\left[\frac{1+t_c}{1+t_m}+\frac{1+t_c}{1+t_v}\right]$

where t_c = District of Columbia rate
t_m = Maryland suburb rate
t_v = Virginia suburb rate

Source: District of Columbia Department of Finance and Revenue.

Sales tax revenues at the general rate were generally available directly from these reports. However, several years posed special problems. During fiscal year 1962 the general rate was raised from 2 to 3 percent. Revenue at both rates is separately available in the summary report for that year. For fiscal year 1969, taxes at the general rates of 3 and 4 percent are reported in aggregate but not separated into two parts. To determine taxable sales it was assumed that monthly collections were equal with 2 months rate at 3 percent. Fiscal year 1973 posed two problems because the general rate was increased to 5 percent on October 1, 1972 and at the same time the rate on transient accommodations and restaurant meals was raised from 5 to 6 percent. Thus 1973 revenue from the general rate included all revenue collected at 4 percent and revenue collected at 5 percent excluding the 3 months of revenue collected at 5 percent from accommodations and meals. This revenue was removed by assuming that the percentage increase in sales of transient accommodations in 1973 was the same as the percentage increase in total sales.

Sales and tax revenue from the food tax base were also calculated from the annual summary reports. From 1962–1968 groceries were the only commodities taxed at 1 percent. Thus the food sales tax was directly obtainable from the summaries. Beginning with fiscal year 1969, food was taxed at 2 percent as were nonprescription drugs and laundry and drycleaning. Therefore to remove the revenue from sales of these commodities, the taxes assessed (collected) at 2 percent from drugstores and drycleaning establishments were not included.

C. ELASTICITY ESTIMATES

As noted in section III, the income and rate differential elasticities can be estimated including a relative price term between the ith commodity and all others. The estimate for food and apparel are given in tables A–4 and A–5. The form of the equation is:

$$\ln R_i = C + a_1 \ln PID + a_2 \ln PR_i + a_3 \ln RATE_i + a_4 \ln TDIF_i + \ln u$$

where

R_i = sales tax revenue of base i;
$RATE_i$ = D.C. tax rate base i;
PID = D.C. personal income;
$TDIF_i$ = tax rate differential variable base i;
PR_i = the relative price variable;
u = error term.

As noted, the relative price terms are not significant and do not affect the other basic conclusions.

D. SALES TAX EFFECTIVE RATES

The following procedure was used to calculate expenditures taxable at the general rate in the District. Taxable expenditures (TE) are defined to be:

(current consumption expenditures) — (food) — (alcoholic beverages)
— (shelter expenditures) — (transportation expenses)
+ (vehicle purchases) — (health care costs) — (personal care costs)
— (recreation) + (boat purchases) + (other recreation)
— (education expenses).

TABLE A–4.—REGRESSION RESULTS FOR FOOD, RELATIVE PRICES INCLUDED

Equation No.	C	LPID	LPFR	LRATEF	LTDIFF	
1	3.37	*0.75	−0.63	*0.70	----------	R^2 = 0.98
	(.67)	(3.30)	(−.84)	(5.15)	----------	DW = 2.22
2	13.77	.27	.35	*.90	−8.00	R^2 = .98
	(1.56)	(.66)	(.35)	(4.66)	(−1.40)	DW = 2.35

* Significant at the 95 percent level of confidence.
Note: t statistics in parenthesis; DW—Durbin-Watson statistic; LDFR is the price level for food relative to other goods.

TABLE A-5.—REGRESSION RESULTS FOR APPAREL, RELATIVE PRICES INCLUDED

Equation No.	C	LPID	LPAR	LRATE	LTDIF	
			OLSQ			
1	4.26	0.74	0.92	*0.90		R^2 =0.97
	(.82)	(3.23)	(1.57)	(3.79)		DW=1.27
2	.86	.90	1.42	.80	3.06	R^2 = .97
	(.08)	(1.74)	(.90)	(2.07)	(.34)	DW=1.28
			Cochrane-Orcutt			
3	3.19	*0.78	0.89	*0.80		R^2 =0.97
	(.60)	(3.27)	(1.14)	(3.22)		DW=1.65
4	1.33	.87	1.16	*.75	1.80	R^2 = .97
	(.14)	(1.94)	(.82)	(2.15)	(.23)	DW=1.63

*Significant at the 95-percent level of confidence.

Note: t statistics in parenthesis; DW—Durbin-Watson statistic; LPAR is the price level for apparel relative to other goods.

In this manner expenditures on nontaxed goods and services have been removed from current consumption. Several of the calculations need clarification. Transportation expenditures net of vehicle purchases were deducted and recreation expenditures net of boat purchases, television purchases, etc. were excluded. While some recreation expenditures would be taxable (for example, accommodations at a hotel), it was felt that many of those taxes would not be incurred in the District by District residents. In addition, one should note that the Consumer Expenditure Survey data do not include expenditures for housekeeping supplies nor nonprescription drugs in the survey. Finally, the survey data used here are from the sample of urban and rural families and single consumers in the United States. To the extent that consumption patterns in the District differ from this aggregate measurement, the effective rates will be biased.

TABLE A-6.—BACKGROUND INFORMATION, CONSUMER EXPENDITURE SURVEY, 1972

Income class	Average family income before taxes	Average family size (number of persons)	Current consumption expenditure
0 to $2,999	$1,178	1.5	$3,040
$3,000 to $3,999	3,460	2.0	3,939
$4,000 to $4,999	4,468	2.2	4,588
$5,000 to $5,999	5,443	2.5	5,134
$6,000 to $6,999	6,457	2.5	5,590
$7,000 to $7,999	7,462	2.9	6,095
$8,000 to $9,999	8,959	2.9	6,833
$10,000 to $11,999	10,934	3.3	7,643
$12,000 to $14,999	13,377	3.4	8,905
$15,000 to $19,999	17,170	3.6	10,245
$20,000 to $24,999	22,076	3.7	12,056
$25,000 and up	40,494	3.7	15,943

Source: "Consumer Expenditure Survey Series: Interview Survey, 1972 and 1973," U.S. Department of Labor, Bureau of Labor Statistics, 1976.

TABLE A-7.—BACKGROUND INFORMATION, CONSUMER EXPENDITURE SURVEY, 1973

Income class	Average family income before taxes	Average family size (number of persons)	Current consumption expenditure
$0 to $2,099	$1,612	1.5	$3,367
$3,000 to $3,999	3,501	2.0	4,231
$4,000 to $4,999	4,479	2.2	4,681
$5,000 to $5,999	5,463	2.3	5,159
$6,000 to $6,999	6,494	2.4	5,559
$7,000 to $7,999	7,480	2.5	6,195
$8,000 to $9,999	8,953	2.8	6,828
$10,000 to $11,999	10,953	3.1	7,798
$12,000 to $14,999	13,433	3.3	8,765
$15,000 to $19,999	17,243	3.6	10,383
$20,000 to $24,999	22,063	3.7	12,542
$25,000 and up	38,482	3.8	16,197

Source: Consumer Expenditure Survey Series: Interview Survey, 1972 and 1973, U.S. Department of Labor, Bureau of Labor Statistics, 1976.

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THE PERSONAL INCOME TAX

(By Emil M. Sunley, Senior Fellow, The Brookings Institution, and Gail R. Wilensky, Senior Health Service Fellow, U.S. Department of Health, Education, and Welfare)

I. The District of Columbia Individual Income Tax

The District of Columbia adopted a broad-based individual income tax in 1939. In fiscal year 1974, this tax became the District of Columbia's largest single source of revenue, passing the real property tax which had been the leader. The individual income tax now accounts for 27 percent of D.C. tax revenue.

The District of Columbia relies more heavily on the individual income tax relative to other tax sources than the state and local governments in Virginia but less heavily than state and local governments in Maryland (see Table 1). The revenue from the D.C. individual income tax is equal to 2.9 percent of personal income. The comparable figures for the neighboring states are 4.1 percent of personal income for Maryland (including the county income taxes) and 2.1 percent for Virginia.

The basic structure of the D.C. income tax is very similar to that of the federal income tax. The taxpayer first adds up all his income from taxable sources and subtracts certain employee business expenses and alimony to obtain adjusted gross income (AGI). He then obtains taxable income by subtracting from AGI his personal exemptions and either his itemized personal deductions or the allowable standard deduction. The taxpayer then applies the tax rates to his taxable income to determine his tax before credits. From that amount he subtracts his allowable tax credits—tax paid to state of domicile other than the District of Columbia campaign contributions, and property tax—to obtain his final tax liability. Taxpayers who do not itemize their personal deductions and who have less than $5,000 of AGI may use an optional tax table to find their tax before credits.

TABLE 1.—SOURCES OF TAX REVENUE OF STATE AND LOCAL GOVERNMENTS, 1974–75

[Money amounts in millions of dollars]

	All State and local governments		District of Columbia		Maryland [1]		Virginia [1]	
	Amount	As percent of total	Amount	As percent of total	Amount	As percent of total	Amount	As percent of total
Individual income	$21,454	15.2	$147	27.0	$986	33.1	$547	19.6
Corporate income	6,642	4.7	24	4.4	92	3.1	117	4.2
General sales	29,102	20.6	114	21.0	396	13.3	485	17.3
Property	51,491	36.4	141	25.9	871	29.2	782	28.0
Other	32,776	23.2	118	21.7	638	21.4	865	30.9
Total tax revenue	141,465	100.0	544	100.0	2,983	100.0	2,796	100.0

[1] Includes the local governments within the State.

Source: U.S. Bureau of the Census "Governmental Finances in 1974–75 and State tax Collections 1975."

TABLE 2.—STATE AND LOCAL INDIVIDUAL INCOME TAX REVENUE, 1975

[Money amounts in millions of dollars]

	Individual income tax revenue	
	Amount	As percent of personal income
District of Columbia	$147	2.9
Maryland [1]	986	4.1
Virginia	547	2.9
Total, United States	21,454	1.9

[1] Includes county income taxes.

Source: See table 1.

Although the basic structure of the D.C. income tax is similar to the federal tax, it differs in a number of important ways, particularly with respect to taxable sources of income and allowable deductions. The D.C. personal exemption is $750 and is the same as the federal exemption. The standard deduction is the lessor of 10 percent of AGI or $1,000 ($500 in the case of married taxpayers filing separately). This is considerably less generous than the federal standard deduction. As a result many families and individuals who owe no federal income tax are taxable under the D.C. income tax.

The $2.4 billion of taxable income reported on D.C. tax returns for 1974 was equal to only 46.7 percent of D.C. personal income. The major differences between personal income and taxable income are shown in table 3.[1] First, adjusted gross income, the closest tax concept to total income, is equal to 64.1 percent of personal income. The major difference is that transfer payments such as social security, supplemental security income, and welfare payments are included in personal income but not AGI.[2] The remaining differences between personal income and AGI are due to statutory exclusions, conceptual differences and unreported AGI. Second, taxable income is less than AGI because of personal exemptions, the standard deduction, and itemized deductions. In 1974, personal exemptions were equal to 9.4 percent of personal income and the standard and itemized deductions were equal to 8.1 percent.

TABLE 3.—DERIVATION OF DISTRICT OF COLUMBIA INDIVIDUAL INCOME TAX BASE, 1974

	Amount (millions)	Percent
Personal income	$5,076	100.0
Less transfer payments[1]	1,037	20.4
Less other statutory exclusions, conceptual differences, unreported AGI [2]	785	15.5
Equals District of Columbia AGI	3,254	64.1
Less personal exemptions	478	9.4
Less standard deductions	109	2.1
Less itemized deductions	303	6.0
Equals taxable income	2,371	46.7

[1] Includes military retirement pay which is included in AGI.
[2] Understated to the extent that transfer payments includes military retirement pay.

Sources: Table 15, District of Columbia Department of Finance and Revenue, "Statistics on District of Columbia Income: Calendar Year 1974 Returns" (June 1976); U.S. Commerce Department, "Survey of Current Business," August 1976.

[1] D.C. personal income is the personal income of D.C. residents. Income earned in D.C. by nonresidents is not included in D.C. personal income. The appropriate treatment of income by nonresidents is considered later.

[2] In contrast to D.C., AGI reported on Federal tax returns in 1974 was equal to 79.6 percent of U.S. personal income. The higher percent for the Federal income tax is primarily due to the lesser importance of excluded transfer payments.

Over the last 10 years, the D.C. tax has been made more progressive, and increased conformity with the federal income tax has been introduced. New rates and brackets were enacted in 1967, 1969, 1970, and 1976. In 1965 the top marginal tax rate was 5 percent of taxable income in excess of $25,000. This was increased in 1976 to 11 percent of taxable income in excess of $25,000. In 1970 D.C. taxation of capital gains and sick pay were conformed to federal law. In 1975 the personal exemption and child care deduction were conformed.[3] Prior to 1975, the personal exemption had been $1,000 for each taxpayer exemption and $500 for other exemptions (dependents, age, and blind).[4]

Between 1970 and 1974 the D.C. individual income tax remained virtually unchanged. During that period D.C. personal income grew 32.2 percent (see table 4). Taxable income grew 36.1 percent, and tax after credits grew 46.0 percent. The tax base grew more rapidly than personal income because personal exemptions and the standard deduction offset a smaller portion of the potential tax base each year.[5] Tax after credits grew more rapidly than taxable income because as per capita taxable income increases taxpayers are pushed into higher tax rate brackets. Even if taxpayers are not pushed into higher tax brackets, average tax rates rise as a greater portion of the income is taxed at the highest bracket rate to which the taxpayer is subject.

A measure of the responsiveness of the income tax growth is its elasticity—the percentage change in revenues divided by the percentage change in income. If the elasticity is equal to 1, then revenues grow at the same rate as income. If the elasticity is greater than 1, then revenues grow more rapidly than income. Using the data for 1970–74, the estimated elasticity of the D.C. income tax relative to personal income is 1.4, about the same as the elasticity of the federal income tax. This means that if D.C. income increases by 10 percent, income tax revenues will automatically increase by 14 percent.[6]

A. THE TAX BASE

Most taxpayers complete their federal income tax returns before beginning their state returns. Their burden in filling out their state returns depends largely on the degree of conformity between the state and federal income tax laws. If there is a high degree of conformity, the state tax return can be completed in 30 minutes or less. If there is little conformity, several hours or even several evenings may be required to fill out the state tax return. Also, a nonconforming state statute probably leads to an increased number of inadvertent taxpayer errors and to higher administrative costs. In the interest of reducing taxpayer compliance costs, inadvertent errors, and administrative costs, a strong case can be made for a high degree of conformity between state and federal income tax laws. If a sufficient degree of conformity is achieved, a state may elect to have the federal government collect the state tax. No state has yet elected this option, but we turn to this topic in the next section. It should be recognized, however, that

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[3] The Tax Reform Act of 1976 replaced the child care deduction with a tax credit. D.C. law has not been conformed to the new tax credit.

[4] There are two taxpayers on a joint return. In the case of a taxpayer filing a head-of-household return the taxpayer exemption had been $1,500.

[5] Personal income also grew more rapidly than adjusted gross income between 1970 and 1974. The major explanation of this is that transfer payments which are included in personal income but not in AGI grew very rapidly during that period.

[6] Such elasticity measures may not be reliable for forecasting future revenues.

there may be overriding considerations of equity or efficiency that would lead one to support major departures from the federal tax base.

TABLE 4.—GROWTH OF THE DISTRICT OF COLUMBIA INDIVIDUAL INCOME TAX BASE AND THE AMOUNT OF TAX AFTER CREDITS, 1970–74

[In millions of dollars]

Year	Personal income	Adjusted gross income	Taxable income	Tax after credits
1970	3,839	2,545	1,742	89.5
1971	4,134	2,624	1,823	95.8
1972	4,455	2,896	2,057	108.7
1973	4,712	3,042	2,187	118.0
1974	5,076	3,254	2,371	130.7
Percent change 1970–74	32.2	27.9	36.1	46.0

Source: See table 3.

Degree of conformity

State income tax laws can be classified based on the degree of conformity to the federal income tax base.[7] Three states—Nebraska, Rhode Island, and Vermont have virtually complete conformance. In these states, the state tax liability is computed as a percentage of the federal tax liability. Eight states have substantial conformance. State taxable income for these states is defined in terms of federal taxable income with minor adjustments. These states apply their own tax rate structure to taxable income. Twenty-one states, including Maryland and Virginia, have only moderate conformance. State adjusted gross income is defined in terms of federal adjusted gross income, again with only minor adjustments. These states then apply their own personal exemptions, deductions, and tax rate structure to state adjusted igross income. Finally, eight states and the District of Columbia are nonconforming states. The tax law in these states does not conform to the federal law with respect to sources of income, personal exemptions, deductions, or the tax rate schedule. After completing their federal tax returns, taxpayers in these states literally must begin all over again.

Complete conformance—state tax liability computed as a percentage of the federal tax liability—produces the greatest simplification for taxpayers. In Rhode Island, for example, most taxpayers are able to compute their tax liability by making just five entries on a 4 x 8 inch card. Such simplification, however, comes at the "cost" of less state antonomy over its income tax. This is true for two reasons. First, states with complete conformance must accept the highly graduated federal rate structure. A tax set equal to say 20 percent of federal tax liability is a very progressive tax when federal rates go from 14 to 70 percent. Second, these states are subject to unexpected changes in state revenues whenever there are changes in federal law. The federal government can pass significant tax cuts at the end of the year with the cuts effective retroactively to the beginning of the year. This reduces federal tax liabilities for the full year and also state liabilities for any state with complete conformity. These induced changes can cause severe fiscal strains at

[7] The discussion which follows is based on Table 20 of Advisory Commission on Intergovernmental Relations, "1974–75 Edition Federal-State-Local Finances; Significant Features of Fiscal Federalism" (Advance Release of the General Sales and Income Tax Sections, November 1975).

the state level, particularly if the state legislature has already adjourned. Because of these unpredictable adverse impacts on state revenues, Alaska and West Virginia have abandoned complete conformity.

States with substantial conformance—state taxable income defined in terms of federal taxable income—are not tied to the progressive federal tax rate schedule. Compared to states with complete conformity, these states can more easily adjust the state tax base for interest on federal securities, interest on state and local securities, and income earned while the taxpayer was domiciled outside the state. Substantial conformance achieves most of the taxpayer simplification achieved by complete conformity. It, however, still leaves the state quite exposed to end-of-the-year changes in federal taxable income due to increases in the personal exemption or the standard deduction permitted on federal tax returns. Substantial or complete conformity is the basic requirement for federal collection of state income taxes, the topic discussed in the next section.

Moderate conformance—state adjusted gross income defined in terms of federal adjusted gross income—permits a state to establish its own personal exemption, standard deduction, and tax rate schedule. The state can also establish its own rules for itemized deductions. Moderate conformance minimizes the possibility of changes in federal tax law, particularly at the end of the year, having an adverse impact on state revenues. Although taxpayer conveience is not as great as with substantial or complete conformance, it can be significantly greater than that under a system with no conformance.

District of Columbia departures from conformance

As indicated above, the D.C. income tax does not conform with the federal income tax with respect to income, deductions, or rates.[8] This type of state income tax maximizes taxpayer inconvenience. Many of the departures under the D.C. income tax are minor affecting only a few taxpayers. All taxpayers, however, must work their way through complex instructions to determine if the D.C. rules affecting them differ from the more familiar federal rules. For example, under "wages" the D.C. tax instructions for Form D–40 tell the taxpayer that, "Amounts paid to or on behalf of an employee or his beneficiary under Section 3401(a)(12) of the Internal Revenue Code to purchase a 'tax sheltered annuity' are gross income for D.C. tax purposes to the employee or his beneficiary."

If one were designing a tax system de novo one might in a number of instances choose the D.C. provision over the corresponding federal provision. Given that the federal income tax is in place, however, a strong presumption ought to exist for conformity between the state and federal tax laws. One might analogize the federal income tax to a large ship. A state income tax is then a small ship sailing behind the large ship. If the small ship sails right behind the large ship, the sailing is smooth. If, however, the small ship gets out in the wake of the large ship, it will find sailing very rough. So it is with a state income tax. High conformity with the federal income tax ensures smooth sailing. Nonconformance causes rough sailing. Only when there are overriding considerations of equity or efficiency should one support major departures from the Federal tax base. For example, a state may not want to accept Federal personal exemptions and the standard deduction.

[8] The District of Columbia did conform to the 1939 Internal Revenue Code. The conformity ended when the U.S. Congress enacted the 1954 Code.

Table 5 lists the major features where the D.C. income tax base differs from the Federal tax base and gives the revenue cost of changing the D.C. tax law so that it conforms to Federal law. The revenue cost of achieving complete conformity is quite high—$25 million compared to estimated tax collections of $187 million fiscal year 1977. The cost of conformity would be almost negligible if the Federal standard deduction were not adopted. It should be remembered, however, that tax rates can be adjusted to ensure that total revenues are not decreased when D.C. law is brought into greater conformity with Federal law. In short, revenue considerations need not be of primary importance when weighing increased conformity between D.C. and Federal tax law. A high degree of conformity between D.C. and Federal taxable income would permit D.C. to piggyback its tax on the Federal income tax. The advantages and disadvantages of piggybacking are discussed below.

Differences in computing adjusted gross income

1. *Interest on Federal obligations.*—Interest on Federal obligations is taxable under the Federal income tax but exempt from D.C. tax. Similarly, interest on state and local obligations are exempt from Federal taxation but is taxable under most State income tax laws. Including the interest on Federal obligations in the D.C. tax base would raise the constitutional issue of the separation of powers between Federal and state governments.[9] Until such time as the Federal Government taxes interest on state and local obligations, States, including the District of Columbia, should probably continue to exclude interest on Federal obligations from the state tax base. D.C. however, could broaden its tax base to include interest on state and local securities. Taxing this interest does not raise the issue of the separation of powers. There is no economic reason why the District of Columbia should subsidize the borrowing costs of the various state governments.

TABLE 5.—PRINCIPAL DIFFERENCES OF DISTRICT OF COLUMBIA AND FEDERAL INCOME TAX BASES, 1977

	Revenue cost of comformity (millions)
Differences in adjusted gross income:	
1. Interest on Federal obligations	+$3.0
2. Dividend exclusion	−.5
3. Keogh plan deduction, IRA deduction, deduction for TIAA/CREF, and taxation of annuity	−1.5
4. Scholarships and fellowships	(1)
5. Subch. S	(1)
6. Unincorporated business income	Not estimated
7. Moving expenses	−.1
8. State tax refund	+.1
9. Reduced uniformed services retirement pay	(1)
10. Supplemental railroad retirement annuities	(1)
Differences in deductions:	
1. Standard deduction	[2] −25.0
2. Taxes	(1)
3. Charitable contributions	−.3
4. Interest	(1)
5. Political contributions	(1)
Total	−24.3

[1] Less than $50,000.
[2] Assumes a $100 tax savings per return for 250,000 returns. The average standard deduction would increase from about $500 to $2,700.

Source: Authors' estimates based on Federal data.

[9] Many Constitutional lawyers believe that there is no Constitutional prohibition on the Federal Government taxing state and local interest or on State governments taxing Federal interest.

2. *Dividend exclusion.*—Under Federal law first $100 ($100 per taxpayer on a joint return) of dividend income can be excluded from income. No similar exclusion exists under the D.C. income tax. We believe that the Federal dividend exclusion has little merit as relief from double taxation of corporate source income or as an incentive for capital formation, and it should probably be repealed. We, however, find little merit in D.C. not conforming to Federal law. A dividend exclusion would reduce the amount of dividends included in AGI by less than 7 percent, and total AGI by 0.3 percent. If the District of Columbia conformed to Federal law, taxpayers would be able to copy the amount of dividends included in AGI from their Federal to their D.C. return. Taxpayers would not have to list the amount of dividends received by payor.

3. *Keogh Plan deduction.*—Under federal law a self-employed person can establish a pension plan and deduct payments made into the plan subject to certain limitations. Payments to beneficiaries of the pension plan are fully taxable. The District of Columbia has no similar provision. On equity grounds, a good case can be made for permitting the self-employed to exclude from income limited amounts set aside for retirement. The federal provision extended to the self-employed some of the tax benefits that employees already had under company pension plans. One argument against having a Keogh plan deduction under the D.C. law is that the plan beneficiaries may move from the District after retirement. In such cases, the income that was deferred when payments were made into the pension plan would never be subject to D.C. tax. But this also happens if an employee covered by a company pension plan should retire elsewhere. Nonconformity places a heavy burden on taxpayer compliance. A self-employed person must keep two sets of books with respect to his Keogh plan. After retirement, payments from the plan would be fully taxable under Federal law but only partially taxable under D.C. law since part of the payment would represent a return of his previously taxed contributions. If a D.C. resident retires elsewhere it is not clear whether his new State would permit any capital recovery with respect to a Keogh plan. He may be subject to a double tax—once when payments are made into the plan and once when benefits are paid out. Considerations of equity and taxpayer compliance suggest that the District of Columbia should follow Federal law.

4. *IRA deduction.*—Under federal law an employee not covered by a pension plan may establish an individual retirement acount (IRA). Payments into these plans, subject to certain limitations, are tax deductible. Payments from the plan are taxed when paid. The District of Columbia has no similar provision. The conformity issue here is similar to that of the Keogh plan, and again, equity and compliance considerations indicate the need for conformity.

5. *Deduction for contributions to Teachers Insurance and Annuity Association or College Retirement Equities Fund (TIAA/CREF).*—Employees of colleges, universities, and certain tax exempt organizations are given an option under their pension plan, TIAA/CREF, to take a salary reduction and have the employer contribute the amount of the salary reduction to the plan. Under Federal law, the amount of the salary reduction is excluded from AGI. Since 1974, the D.C. government has adopted the position that any salary reduction must be

taxed to the employee currently. The issue is currently being litigated. However, since the instruction to D.C. tax form D–40 contain no specific guidance to employees of tax of tax exempt organizations covered by salary reduction agreements, it is likely that few employees are aware of D.C.'s interpretation of the law, and even fewer follow it. Although we believe that the federal treatment of TIAA/CREF is far too generous—no other employees are able to select individually the level of tax-deductible contributions to be made to a pension plan on their behalf—D.C. nonconformity serves little purpose.

6. *Taxation of annuities.*—Both Federal and D.C. law have their own rules with respect to cost recovery of employee contributions to pension plans. The Federal rules though complicated are at least manageable. Most employers inform their retired workers as to what portion of their pension is taxable and what portion is excludable from the federal tax base. Most retirees are on their own when it comes to figuring the taxable and excludable portion of the pension for D.C. tax purposes. It is unlikely that many retirees receiving contributory pensions properly report their pension income to the D.C. government. It would be far simpler for the taxpayer if D.C. would accept for the purposes of its income tax the amount of pension income reported on the Federal return.

7. *Scholarships and fellowships.*—Under Federal law most scholarships and fellowships are excludible from income. To qualify as a scholarship or fellowship, the payments must be made primarily to further the recipient's education and training. The payments do not qualify if they are compensation for past, present, or future services. If the recipient is not a degree candidate, however, only $300 a month may be excluded, and the recipient is limited to 36 months during his lifetime. Under D.C. law the full amount of scholarships and fellowships is taxable if services are performed. If no services are performed, the full amount is not taxable. This departure from federal law only affects a few taxpayers, and most of them are probably unaware that D.C. law differs from federal law. District of Columbia adoption of federal law would expand the D.C. tax base slightly and would simplify the D.C. income tax.

8. *Moving expenses.*—Federal law permits a deduction from gross income for most nonreimbursed moving expenses connected with a new job. District of Columbia requires any reimbursement received from the employer to be included in AGI. Moving expenses are deductible only to the extent of reimbursement. Thus D.C. permits no deduction for nonreimbursed moving expenses. If the employer reimbursement exceeds actual moving expenses, the difference is included in D.C. AGI. Whether District of Columbia should permit a deduction for moving expenses is a close issue. Many would argue that moving expenses are often a cost of earning income and should be deductible. Not permitting a deduction for nonreimbursed expenses unduly favors taxpayers who are reimbursed by their employers for their moving expenses and are not taxed on the reimbursement. When a taxpayer moves into the District of Columbia or away from the District of Columbia it is not clear which tax jurisdiction should permit a deduction for moving expenses. There would clearly be a reluctance to permit a deduction for moving expenses incurred by a taxpayer who has moved from the tax jurisdiction. Possibly D.C. should permit a

deduction only for taxpayers who have moved to the District, and the deduction would be equal to the allowable federal deduction.[10]

9. *Subchapter S corporations.*—Under Federal law Subchapter S corporations are taxed like partnerships. Shareholders thus include in income their share of the net income of the corporation whether or not that income is distributed. Shareholders adjust their basis in the stock of the corporation for the amount of income taxed but not distributed and for the amount distributed but taxed in a prior year. D.C. law treats Subchapter S corporations like other corporations. Thus, shareholders are only taxed on dividends received. Since D.C. law differs from federal law, Subchapter S shareholders will often have a different adjusted basis for their stock for D.C. tax purposes than for federal tax purposes. As a result, gain or loss from the disposition of Subchapter S stock will differ for D.C. and federal tax purposes. We believe that D.C. law should conform to federal law. Nonconformance leads to incredible complexity for the taxpayer, particularly given the different basic rules under D.C. and federal law. Subchapter S's conformity should increase the base of the D.C. individual income tax. However, to the extent that Subchapter S corporations carry on their business in D.C., conformity would reduce the base of the D.C. corporate income tax.

10. *Unincorporated business income.*—Sole proprietors and partners include their unincorporated business income in the Federal income tax base. This income is not taxed at the business level. The District of Columbia, however, imposes a separate tax on D.C. unincorporated business as a way of taxing some of the income earned in the District of Columbia by nonresidents. D.C. residents then include in the D.C. individual income tax base only the amount of unincorporated business income that is not taxable to the unincorporated business. Adopting federal conformity here requires repeal of the D.C. unincorporated business tax, and this raises the issue of how nonresidents should be taxed. To anticipate the later section in this paper, we recommend that the unincorporated business tax be repealed and that nonresidents be taxed on income earned in the District.

11. *State tax refund.*—Under Federal law taxpayers include in income State income tax refunds attributable to itemized deductions taken in a prior year that resulted in a Federal tax benefit. Such refunds are not included in the D.C. tax base which makes sense given that the District of Columbia does not permit an itemized deduction for its own income taxes. If the District of Columbia were to adopt Federal AGI conformity, a special adjustment could be made for state income tax refunds excluded from Federal AGI.

12. *Reduced uniformed services retirement pay.*—Retired military who elect a reduced annuity under the Retired Serviceman's Family Protection Plan are not taxed under federal law on the amount of the reduction. There is no similar exclusion under D.C. law. As a result, retired servicemen may be taxed on annuity income they have not received. It is unlikely that many retired servicemen living in D.C. either know or follow the D.C. rule. It is not mentioned in the instructions to the D–40. We would recommend conformity with federal law.

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[10] Because of the 35-mile rule under Federal law, moves within the District never qualify for the moving expense deduction. If D.C. adopted conformity with federal AGI, disallowed moving expenses could be added back to income received while not a resident of the State.

13. *Supplemental railroad retirement annuities.*—Railroad retirement benefits, like social security benefits generally, are not taxable. Under federal law, however, supplemental railroad retirement annuities are taxable. These supplemental annuities are not taxed under D.C. law. Apparently D.C. exempts from taxation all benefits paid under the Railroad Retirement Act. This departure from Federal law is not mentioned in the D–40. We would recommend that the District of Columbia conform to Federal law.

Proposal for AGI conformity

Most of the differences between D.C. and Federal AGI are minor, and they affect only a few taxpayers. They impose complexity, however, on all taxpayers who must contend with the instructions for the D–40, and some of the differences are not even mentioned in the instructions. We would recommend that D.C. adopt federal AGI as the starting point for the D.C. income tax. This is essentially the approach used by Maryland and Virginia. Taxapayers would then make certain additions and subtractions from federal AGI to get to D.C. AGI. The instructions to the D–40 would explain each of these adjustments. We believe that only four adjustments would be required:

1. Subtract state tax refund included in Federal AGI;
2. Add interest on state and local obligations;
3. Subtract interest on federal obligations;
4. Subtract income earned while not a resident of D.C.[11]

Differences in deductions

D.C. law differs from federal law with respect to the standard deduction and allowable itemized deductions. Since the D.C. standard deduction is less generous than the federal deduction, many taxpayers who claim the standard deduction for the federal tax return end up itemizing on their D.C. returns.

The D.C. standard deduction is essentially the same as Federal law before 1964. The deduction is limited to 10 percent of AGI not to exceed $1,000 ($500 in the case of married couples filing separately). The Federal standard deduction was liberalized in 1964 and several times since then. It is now equal to $2,200 for single individuals and heads of households and to $3,200 for married couples filing jointly.

The less generous standard deduction permitted for D.C. tax purposes insures that many taxpayers who owe no Federal income tax will owe D.C. income tax. This is discussed in the section on exemptions and the standard deduction where consideration is given to the tax threshold for families of various sizes. Here we only point out that conformity with the Federal standard deduction would be a major simplification. It would enable many taxpayers who now itemize their personal deductions to switch to the standard deduction. This change by itself would reduce D.C. revenue by $25 million. Most of the reduction would go to families and individuals with income of less than $10,000 per year. This revenue decrease could be all or partly offset by increasing the marginal tax rates in the lowest tax brackets.

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[11] This adjustment would include adding back to income moving expenses allowed on th Federal return for taxpayers who have moved from the District. If nonresidents were made subject to tax on their D.C. income, they would subtract income earned in their place of residence.

Whether the District of Columbia should adopt the Federal standard deduction depends in part on whether the District of Columbia wants to adopt taxable income conformity or piggybacking. If the District of Columbia does not want to go as far as taxable income conformity, the District of Columbia can continue to have a standard deduction which is less generous than the Federal deduction. The District of Columbia may also want to consider a requirement that only taxpayers who itemize on their Federal return may (or must) itemize on their D.C. return. This requirement would eliminate situations where taxpayers itemize for D.C. tax purposes but not for Federal purposes. We return to this rule when we discuss itemized deduction conformity.

The D.C. Revenue Act of Fiscal Year 1978 amends D.C. law to permit general conformity with Federal itemized deductions. Beginning with tax returns for 1977, the deductions for medical expenses and for most taxes are conformed to Federal law. The old child care deduction is converted to a 6 percent tax credit and alimony is permitted as an adjustment to income instead of an itemized deduction. These last two changes parallel Federal changes provided in the Tax Reform Act of 1976. Some differences between D.C. and Federal itemized deductions remain.

Conforming the remaining itemized deductions to Federal tax law, except the deduction for state income taxes discussed below, would have little impact on D.C. revenues. We believe that these changes should be made. The reduction in taxpayer compliance costs and tax administration costs fully justify these changes even though if we were starting an income tax system de novo we might very well prefer the D.C. rules for itemized deductions to present Federal rules.

1. *Taxes.*—The D.C. Revenue Act of Fiscal Year 1978 reduced the amount of nonconformity in this area. Prior to that Act, Federal excise taxes on services and transportation and social security taxes paid for domestic employees were deductible for D.C. tax purposes but not for Federal. D.C. law still does not permit the deduction of some taxes which are deductible on the federal tax return. At the same time some taxes that are deductible for D.C. tax purposes are not deductible for federal tax purposes. For example, the District of Columbia permits no deduction for state, local or foreign income taxes or for the D.C. franchise tax. In our judgment this is appropriate. This is similar to the Federal Government not permitting a deduction for Federal income taxes. If a State elects to piggyback its tax to the Federal income tax (see next section), it would be allowed to adjust Federal taxable income for State tax purposes by the net amount of State, local, and foreign income taxes deducted on the Federal tax return.

Sixteen states permit a deduction for Federal income taxes similar to the federal deduction for state income taxes. Such a deduction is unnecessary, and it is in effect a form of "reverse" revenue sharing from the State to the Federal Government. State deductibility in addition to federal deductibility can significantly reduce the progressivity of the tax system unless marginal tax rates are raised to very high levels.

Taxes which are not deductible on the Federal tax return but are deductible on the D.C. tax return are auto license fees for taxable years before 1978 and real estate deed recordation tax. There is not

much to justify the deduction for these taxes. Generally user charges should not be deductible, and Federal law ended the deduction of user charges other than the gasoline tax in 1964. Many D.C. taxpayers probably fail to claim all the special taxes they are entitled to deduct because they are unaware that some taxes are deductible on the D.C. return that are not deductible on the Federal return or they do not maintain adequate records to support the deduction.

2. *Charitable contributions.*—The D.C. deduction for charitable contributions differs from the Federal deduction in three respects. First, contributions to organizations which do not carry on their charitable activities to a "substantial extent" in the District of Columbia are not allowed. Second, the total deduction cannot exceed 15 percent of D.C. adjusted gross income. Third, there is no carryover for contributions disallowed in previous years because of the 15 percent limitation. Again one must ask whether the gains from these refinements are worth the additional complexity. One can argue, however, that a tax deduction for contributions is a tax subsidy and that the D.C. government should not subsidize charitable organizations which do not carry on their activities in D.C. If the deduction is liberalized to conform to Federal law most of the benefits will accrue to high income families who make the largest charitable gifts. On the other hand, none of the 50 States limit the charitable deduction to organizations which carry on their activities in that state. Also, many taxpayers are probably unware that D.C. law has such a limitation. Thus taxpayers who carefully follow D.C. law are subject to a tax on knowledge or a tax on honesty, which is hardly desirable in any tax system. The enforcement problems must be significant since reasonable people can disagree on whether a particular organization carries on charitable activities in D.C. to a "substantial extent," the meaning of which is not explained in the D–40 instructions. For example, if the University of Colorado runs a semester-in-Washington program, are contributions to the university tax deductible? If Yale University recruits minority students in the District are contributions to Yale deductible? The revenue and distributional implications of moving to federal rules for the charitable deduction can be offset by changing the marginal tax rate schedule. We would recommend that taxpayers should be permitted to deduct on their D.C. tax returns whatever contributions are allowable on their federal returns. There should be complete conformity between D.C. and Federal deductions for charitable contributions.

3. *Interest.*—The differences between the interest deduction provisions of the D.C. income tax and the Federal income tax are minimal. The D.C. Revenue Act of Fiscal Year 1978 reduced the amount of nonconformity. Some differences remain. D.C. law now has a special provision for interest on the purchase of educational services under contract. D.C. taxpayers will now be subject to the Federal limitation on investment interest. We would recommend that the interest deduction on the D.C. tax return be fully conformed to the allowable Federal deduction.

4. *Political contributions.*—Federal law permits either a tax deduction or a tax credit for a limited amount of political contributions. D.C. law has a more restricted tax credit, but no deduction. Under Federal law, the deduction alternative only benefits taxpayers subject to marginal tax rates above 50 percent. We would only reluctantly en-

dorse a deduction under the D.C. tax, and would do so only because this would permit D.C. to achieve conformity on itemized deductions.

Proposal for itemized deduction conformity

A major simplification could be achieved if the D.C. law accepted Federal itemized deductions other than the deduction for state and local income taxes. The D.C. schedule for itemized deduction could be reduced to five lines as follows:

1. Total itemized deductions from federal return;
2. Subtract state and local income taxes included on line 1;
3. Total (line 1 less line 2);
4. Subtract deductions during period of non-resident status;
5. Total D.C. itemized deductions.

Taxpaypers would be permitted to itemize their D.C. deductions only if they itemized deductions on their Federal return.[12] This is the requirement in Maryland. Virginia has a tougher rule that requires taxpayers to itemize their deductions if they do so on their Federal return. There is not much to be said for choosing between the Maryland and the Virginia rules. Under the Maryland rule some taxpayers who itemize for Federal tax purposes choose the standard deduction for State tax purposes. This is advantageous in circumstances where State and local income taxes are the major itemized deduction on the Federal return.

The D.C. Revenue Act of Fiscal Year 1978 reduced the degree of nonconformity in itemized deductions between D.C. and Federal law. It did not, however, provide that future Federal changes would be automatically adopted by D.C. Therefore, D.C. and Federal law regarding itemized deductions are likely to grow apart as the U.S. Congress modifies Federal law.

Taxable income conformity

Taxable income conformity would require the District of Columbia to conform to Federal law with respect to AGI, the standard deduction, and itemized deductions. The major advantage of taxable income conformity is that it would permit District of Columbia to elect for the Federal Government to collect the D.C. tax. This option is discussed in the next section on piggybacking. If District of Columbia is not going to elect piggybacking, most of the simplification from conformity could be achieved if District of Columbia would adopt both AGI conformity and itemized deduction conformity. District of Columbia would still maintain its own standard deduction levels. Taxpayers, however, would begin with Federal AGI and make several adjustments to get D.C. AGI. Taxpayers who itemize would begin with Federal itemized deductions and make several adjustments to get D.C. itemized deductions.

Other differences between D.C. and Federal law

Up to this point we have focused on differences between D.C. and Federal law affecting the determination of adjusted gross income and taxable income. The federal income tax contains a number of other provisions that are not in D.C. law, but these other differences do not affect AGI or taxable income. Most obviously, D.C. and Federal

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[12] Below we discuss the D.C. rule which requires part-year residents to itmize their deductions. We urge that this rule be abolished and that part-year residents be permitted to pro-rate the allowable standard deduction.

law have different tax rate schedules. Federal law also provides several tax calculation methods not provided under D.C. law—income averaging, the maximum tax on earned income, the minimum tax on preference income, the alternative tax on capital gains. In addition, Federal law contains a number of tax credits not permitted under D.C. law—the retirement income credit, the investment tax credit, the foreign tax credit, the work incentive credit, and the general tax credit. District of Columbia provides a property tax credit not available under Federal law.[13] Both District of Columbia and the Federal government permit a credit for campaign contributions.

B. PIGGYBACKING

In 1972 Congress provided for Federal collection of state individual income taxes (generally known as piggybacking) for states that have a qualified tax and enter into an agreement with the Internal Revenue Service. Under the 1972 law, piggybacking would have been triggered only if at least two States, representing 5 percent or more of the Federal individual income tax returns in 1972, elected piggybacking. The Tax Reform Act of 1976 eliminated the 5-percent-of-returns rules and the two-State requirement so that now one State can trigger piggybacking. The 1976 Act makes it clear that the Federal Government will bear the administrative costs of piggybacking and also permits a qualified State tax to include a sales tax credit (but not a property tax credit.)

For a State income tax to be considered a qualified tax and thus be eligible for piggybacking it must conform closely to the Federal income tax. The State tax can conform either to Federal tax liability or to Federal taxable income with certain specific adjustments required or permitted.[14] If the qualified state tax is based on taxable income, there are three required adjustments:

1. Subtract interest on obligations of the United States which was included in gross income for the year.
2. Add net State income tax deductions for the year (the itemized deduction for State income taxes less the amount of any refund of prior year's taxes included in gross income).
3. Add tax exempt interest on State and local bonds.

There are also three permitted adjustments:

1. A minimum tax on tax preference income,
2. A credit for income taxes paid to another State or a political subdivision of another State,
3. A credit for State sales taxes.[15]

There are similar required and permitted adjustments if the State qualified tax is based on Federal tax liability.

The amounts collected with respect to a qualified State tax would be transferred on a current basis to the State on the basis of estimates. Each year adjustments would be made when figures relating to the actual amounts collected are available.

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[13] The property tax credit is one of the most complex credits we have ever seen. We doubt that any taxpayer could properly determine the amount of credit he is allowed. It is not surprising that few eligible taxpayers are claiming the credit. We, however, are not going to discuss the merits of providing property tax relief under the income tax. See the paper on property taxes for analysis of this provision.

[14] In the case of nonresidents, a qualified tax must be imposed on the wage and other business income of the nonresidents.

[15] If a credit is allowed for state sales taxes, the itemized deduction for state sales taxes must be added back to taxable income.

If the District of Columbia were prepared to accept Federal taxable income, with an appropriate adjustment for Federal interest and state and local interest, the Federal standard deduction including the low income allowance, and Federal itemized deductions other than the deduction for State income taxes, the District of Columbia would have a qualified tax for Federal piggybacking. In the previous section we argued that these changes for greater Federal conformity (other than the standard deduction) should be adopted on their own merit. If these changes were adopted, the District of Columbia would have the option of electing Federal collection of the District of Columbia income tax.

There are clearly advantages and disadvantages of piggybacking and these must be carfully weighed. Under piggybacking taxpayers would be able to satisfy both Federal and the District of Columbia filing requirements with single return, greatly reducing taxpayer compliance costs. Businesses would benefit because both Federal and the District of Columbia withheld taxes could be handled by a single remittance. The costs of administering the income tax would be reduced because the arithmetic verification would be done only once. The Internal Revenue Service would audit a return for both the Federal and the District of Columbia tax liability. Taxpayers would not be subject to two spearate audits. The income tax audit function of the District of Columbia Department of Finance and Revenue would be discontinued. The District of Columbia Government would save the costs it now incurs in administering the District of Columbia tax since under piggybacking these costs would be borne by the Federal Government. Also, the right of the State to represent its own interests is preserved in State court litigation relating to the State Constitution and in certain litigation involving the relationship between the United States and the State.

There are three objections to piggybacking that have been raised by its opponents. First, piggybacking requires the adoption of federal taxable income as the tax base of the State income tax. As pointed out above in our discussion of conformity, this increases the risk of Federal tax law changes having adverse impacts on state revenues. Second, the Federal Government might devote insufficient resources to the audit and compliance of the state portion of the tax return. It is argued that the Federal Government would have no incentive to enforce the State tax since any additional revenue would only go to the State. Third, States have trained personnel in the income tax field who might be out of jobs if piggybacking is adopted.

We believe that the gains from piggybacking probably more than offset the disadvantages. The most serious disadvantage is the potential adverse impacts on revenues from year-end changes. Eight States, however, have adopted Federal taxable income as the base of their income tax. For these States the simplification gains probably outweighed the risks of adverse revenue impacts. With respect to the second objection to piggybacking we believe that voluntary compliance is likely to be greater under a State income tax administered by the Federal Government. Rightly or wrongly, the average citizen probably fears an audit by the Federal Government more than one by a State government. The jobs impact of adopting piggybacking can be met by

transferring income tax auditors and related personnel to other sections of the Department of Finance and Revenue. As a result, improved administration of the local property tax may well follow from adoption of piggybacking.

C. PERSONAL EXEMPTION AND STANDARD DEDUCTION

The level at which the personal exemption and the standard deduction are set determine the tax threshold for families of various sizes and the degree of progressivity of the tax, particularly at the lower end of the income scale. The District of Columbia income tax has the same $750 personal exemption as the Federal income tax. Unlike Federal law, a head of a family qualifies for two personal exemptions.[16] The District of Columbia standard reduction—10 percent of AGI but not more than $1,000—is considerably less generous than the Federal standard deduction. In addition, the Federal income tax includes a general tax credit that further increases the tax threshold levels. This credit is equal to the greater of $35 per capita or 2 percent of the $9,000 taxable income.[17]

Table 6 gives the minimum taxable levels under the District of Columbia and Federal income taxes and also gives the estimated poverty level budget for families of various sizes. Two conclusions emerge from this table. First, District of Columbia tax thresholds are far below the Federal thresholds. Even a family of four with $3,333 of income begins to pay the District of Columbia income tax. This same family would not pay Federal income taxes until income rose to $7,200. Second, the Federal tax threshold levels are about equal to the poverty levels. Thus individuals and families who have incomes below the poverty level generally are exempt from Federal income tax. Under the District of Columbia law, many of these individuals and families are subject to the income tax.

The major reason why the tax threshold levels for the Federal income tax are much higher than under the District of Columbia tax is that taxpayers on their Federal tax returns may claim a flat standard deduction of $2,200 in the case of single individuals and heads of households and $3,200 in the case of married couples filing jointly. We would recommend that the District of Columbia income tax adopt the Federal standard deduction.[18] By itself, this change would reduce District of Columbia revenues by $25 million.

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[16] Head of a family is a single individual or a married individual not living with his or her spouse who supports in his or her house one or more dependents.

[17] The Federal income tax also contains an earned income credit which is refundable. The credit may only be claimed by married couples with children. If this credit is viewed as a refund of social security taxes paid by low income families, then it cannot be viewed as increasing the tax threshold levels of the Federal income tax. The earned income credit is not included in the computations underlying Table 6.

[18] Piggyback would require adoption of the Federal standard deduction. Here we are only concerned with the minimum standard deduction.

TABLE 6.—MINIMUM TAXABLE LEVEL UNDER THE DISTRICT OF COLUMBIA AND FEDERAL INDIVIDUAL INCOME TAXES AND ESTIMATED POVERTY-LEVEL BUDGETS FOR FAMILIES OF VARIOUS SIZES, 1977

Size of family	District of Columbia minimum taxable level [1]	Federal minimum taxable level [2]	Poverty level budget [3]
Single person	$833	$3,200	$3,107
Head of household with 1 dependent	2,500	4,200	3,900
Couple without dependents	1,667	5,200	4,018
Family of 4	3,333	7,200	6,110

[1] Based on District of Columbia personal exemptions and standard deduction.
[2] Based on Federal personal exemptions, personal exemptions credit and standard deduction, now known as the "zero bracket amount."
[3] Report of U.S. Senate Finance Committee, "Tax Reduction and Simplification Act of 1977," Report 95-66, p. 50.

Adopting the Federal low income allowance would not ensure that the D.C. tax threshold levels were the same as the Federal levels. The Federal level would still be higher because Federal law provides a general tax credit in addition to the $750 personal exemption. This credit increases the tax exempt levels of income by about $250 per person. If one wants to further increase the tax exempt levels of income under D.C. law, we would recommend that the D.C. standard deduction or the personal exemption be made more generous than that provided under Federal law. (Such a change would have to be weighed against the general goal of increased conformity.) There are sound policy reasons for not having both a personal exemption and a general tax credit. The distribution of tax burdens achieved by adding a general tax credit can also be achieved by changes in the personal exemption, the low income allowance, and the tax rate schedule.

There has been considerable discussion of replacing the personal exemption with a tax credit, and several states have already adopted tax credit and done away with personal exemptions. The personal exemption has been criticized because the deduction is worth more the higher the marginal tax rate to which the family is subject. For example, a $750 personal exemption is worth only $15 for the family in the 2 percent tax rate bracket. It is worth $82.50 for the family subject to the top rate of 11 percent.[19] A tax credit of about $40 per exemption would be worth the same dollar amount for all taxpayers,[20] and it would cost about the same in D.C. revenues as the $750 personal exemption. This break-even credit would increase the progressivity of the tax system by reducing the tax burden of low income families and increase the tax burden of high income families. The credit would also increase the tax differences between low-income families of different sizes and reduce it for high income families of different sizes. Adopting a tax credit to increase the progressivity of the D.C. income tax is not

[19] This ignores the deductibility of State taxes on the Federal tax return.
[20] Unless the credit was refundable, it would not be worth the same dollar amount for taxpayers who have too little tax liability before the credit to make full use of it or who are already nontaxable.

a good reason for making this change. The same impact on progressivity can be achieved by retaining the personal exemption and changing the marginal tax rate schedule or the low income allowance. Although we are not strongly opposed to the Federal Government replacing the personal exemption with a tax credit, we believe that taxpayer compliance problems are reduced if the D.C. income tax follows the basic Federal pattern of a $750 personal exemption. If the Federal Government should replace the exemption with a tax credit, D.C. should also do so.

D. FILING STATUS

Under the Federal income tax there are four tax rate schedules, one each for single individuals, married couples filing jointly (and certain widows and widowers), heads of households, and married individuals filing separately. D.C. law has only one rate schedule. A head of a family is permitted to claim an extra $750 personal exemption. Married couples where each spouse has income may file separately and gain the advantage of a second run up the marginal tax rate schedule.

Given that there is only one tax rate schedule and that married couples may file separately, the D.C. tax is very close to being a tax that requires individuals to file separately. Married couples have one advantage not available to two single individuals. The spouse with the lower earned income can report all the income from jointly owned property. If the couple itemizes, the spouse with the higher earnings can claim all or almost all the itemized deductions. This shifting of income and deductions permits spouses to in effect average their income.

We suggest that D.C. not adopt separate rate schedules like the Federal tax. This change would introduce more problems than it would solve. Under Federal law certain single individuals and two-income families are penalized. Single individuals claim that if they get married, presumably to someone with little or no income, their taxes would go down because they would now be able to use the tax rate schedule for joint returns. Two-income families claim that they would often pay less if they were not married and were permitted two runs up the single rate schedule. They would also be permitted two separate standard deductions which is more generous than the standard deduction allowed if they file jointly. The federal tax law has not solved the problem of the penalty on being single or the marriage penalty.

The D.C. tax solves the problem by being essentially a tax on individuals filing separately. The one problem with this approach is that two families with the same income may pay very different amounts of tax depending on how the income is split between the husband and the wife. The D.C. approach mitigates this by permitting the shifting of property income and itemized deductions, a kind of averaging. This, however, may be seen as giving married couples a tax advantage not available to single individuals.

D.C. law does contain one penalty on married couples. The maximum standard deduction is $1,000 per couple, the same as for single individuals. (Married individuals filing separately are limited to $500 each.) Thus, two single individuals when they get married may find their standard deduction cut back. At present levels of the standard deduction this is not a very serious problem. It would become consider-

ably more serious if the District of Columbia should adopt the Federal standard deduction. The cut back in the standard deduction instead of being at most $500 would increase to as much as $1,200.

The instructions to the D–40 give no indication as to how spouses who elect to file separate returns are to split property income and itemized deductions. Many spouses may split these items 50–50 to their tax disadvantage. The instructions should be made explicit as to how income and deductions are to be split.

Continuing the D.C. filing system would still permit the District of Columbia to adopt Federal conformity with respect to adjusted gross income and itemized deductions. Piggybacking, however, would require conformity with respect to the filing status and also the standard deduction. If piggybacking were adopted, married couples filing jointly and heads of households should be provided separate tax rate schedules with somewhat lower marginal tax rates than that now available for single individuals. The rate schedule for married filing separately should be made somewhat higher than that for single individuals. These changes would benefit one-earner families and may disadvantage some two-earner families unless the joint rate schedule were constructed to permit in effect full income splitting between spouses.[21] Piggybacking should not be rejected because D.C. would have to adopt the Federal system of four tax rate schedules.

E. THE TAX RATE SCHEDULE AND EFFECTIVE TAX RATES

There is general support for a progressive individual income tax not at the Federal level but also at the State and local level. Disagreement arises as to the degree of progressivity that is desirable. This is mostly an equity issue and reasonable people can disagree. In this section we compare the D.C. tax rate schedule with that in Maryland and Virginia, the two jurisdictions that might compete with the District of Columbia for residents. It should be recognized that it is the progressivity of the total revenue system and the level of government services provided that is important for location decisions, not the progressivity of each tax separately.

The progressivity of the income tax is determined essentially by the level of the personal exemption, the level of the standard deduction, and the steepness of the marginal tax rate schedule. Progressivity is not determined by the tax rate schedule alone. Increases in the standard deduction or introduction of a low income allowance would, for example, increase the effective progressivity of the D.C. income tax.

Considerable attention, however, is focused on the marginal rate schedules. At present, District of Columbia has a marginal tax rate schedule that begins at 2 percent on the first $1,000 of taxable income and increases to 11 percent on taxable income in excess of $25,000. The 11 percent top marginal rate is higher than that in Maryland or Virginia. The tax rates in Maryland begin at 2 percent and rise to 5 percent of taxable income in excess of $3,000. Maryland counties are able to piggyback a county income tax on the State tax. Most counties, including those that border the District of Columbia, impose a county

[21] Full income splitting is achieved when the bracket widths for the joint income schedule are twice as wide as those for the single rate schedule. This was the federal system prior to 1971.

tax equal to 50 percent of the State liability. Thus, the Maryland income tax rates when the county tax is taken into account rise from 3 percent to 7.5 percent. The Virginia tax rate schedule begins at 2 percent. The top rate is 5.75 percent on taxable income in excess of $12,000.

Although the top marginal tax rate for the District of Columbia is higher than that for Maryland and Virginia, other states have rates that are higher than the District of Columbia. The highest marginal tax rates are 19.8 percent in Delaware, 15 percent in Minnesota and New York, 14.5 percent in Alaska, and 11.4 percent in Wisconsin.

Effective tax rates under the D.C. tax rise sharply with income, as shown in Table 7. The effective rate after taking into account the property tax credit is −1.6 percent for a four-person family with $5,000 of adjusted gross income. The effective rate rises to 6.4 percent for adjusted gross income of $50,000.[22] Individuals and married couples without children have similar increases in effective tax rates as income increases.

Table 8 and Table 9 give effective tax rate calculations for Maryland and Virginia. The Maryland calculations include the 50 percent county surcharge. The Virginia effective tax rates are always below the District of Columbia for all income levels and the various family sizes. This is particularly true in the low income classes because Virginia has a more generous standard deduction. The situation for Maryland is somewhat different. Low and middle income families in Maryland pay higher effective tax rates than D.C. families with the same level of income. Maryland has the same standard deduction as the District of Columbia, and the personal exemption of $800 is little more generous than that allowed in the District of Columbia. The marginal tax rates, however, are higher in Maryland than in the District of Columbia for low levels of income. Not until income gets up to $15,000 does the effective rate in the District of Columbia rise above that in Maryland. Tables 7 and 8 suggest that low-income families have an incentive to locate in the District and high income families have an incentive to locate in Maryland. But, it should be remembered that location decisions are not based on one tax alone. Other taxes and government services also impact on the location decision.

Tables 7 through 9 do not take into account the deductibility of State income taxes under Federal law. Deductibility reduces the effective tax rate for taxpayers who itemize their personal deductions. For a taxpayer in the 25 percent Federal tax bracket and a 6 percent D.C. tax bracket, deductibility reduces the effective D.C. rate to 4.5 percent. That is, these taxpayers by deducting their D.C. income taxes reduce their Federal taxes by 25 cents on the dollar. The effective tax rate is therefore reduced 25 percent.

Tables 10 through 12 give effective tax rates taking into account Federal deductibility.[23] Two major conclusions emerge from these tables. First, effective tax rates adjusted for the tax saving from deductibility

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[22] The computations of effective tax rate assume that families with $10,000 or less of AGI use the standard deduction. Families with more than $10,000 of AGI are assumed to have itemized deductions equal to 15 percent of AGI. It is assumed that all income is from wages and salaries and earned by one spouse.

[23] These tables are based on 1976 Federal law. The story to be told would be little changed if the effective rates were recomputed using 1977 Federal law.

are fairly level over a wide income range. For a four-person family in the District of Columbia the effective tax rate is 2.7 percent at $10,000 of income and only 4.3 percent at $50,000 of income. Deductibility, in short, reduces the effective rates more for high income families which are subject to higher marginal income tax rates under Federal law. Second, deductibility reduces the differential between D.C. and the suburbs. If deductibility is not taken into account, the differential between the District of Columbia and Virginia is 2.9 percentage points for a four-person family with $25,000 of income. After taking into account deductibility, the differential is reduced to 1.2 percentage points.

One can view the deductibility of State and local taxes as a kind of indirect revenue sharing or an incentive for State and local governments to adopt progressive taxes so as to maximize the tax savings from deductibility. It also reduces the tax differences between States particularly for high income taxpayers who generally itemize their deductions.

TABLE 7.—DISTRICT OF COLUMBIA INDIVIDUAL INCOME TAX AND EFFECTIVE TAX RATE [1]

AGI	Single		Married, 2-person family		Married, 4-person family	
	Tax (dollars)	Effective rate (percent)	Tax (dollars)	Effective rate (percent)	Tax (dollars)	Effective rate (percent)
$5,000 [2]	12.50	0.3	−25.00	−0.5	−80.00	−1.6
$7,500	270.00	3.6	217.50	2.9	127.50	1.7
$10,000	427.50	4.3	375.00	3.8	270.00	2.7
$12,500	541.25	4.3	488.75	3.9	383.75	3.1
$15,000	710.00	5.7	650.00	5.2	532.50	4.3
$20,000	1,082.50	7.2	1,015.00	6.8	880.00	5.9
$25,000	1,500.00	7.5	1,425.00	7.1	1,275.00	6.4
$30,000	1,925.00	7.7	1,850.00	7.4	1,700.00	6.8
$40,000	2,857.50	7.1	2,775.00	6.9	2,610.00	6.5
$50,000	3,792.50	7.6	3,710.00	7.4	3,545.00	7.1

[1] Assumes that taxpayers with AGI of $10,000 or less use the standard deduction. Those with more than $10,000 of AGI are assumed to have itemized deductions equal to 15 percent of AGI. Also assumes that all income is from wages and salaries and earned by 1 spouse.
[2] Assumes maximum property tax credit of $115.

TABLE 8.—MARYLAND INDIVIDUAL INCOME TAX AND EFFECTIVE TAX RATE [1]

AGI	Single		Married, 2-person family		Married, 4-person family	
	Amount (dollars)	Effective rate (percent)	Amount (dollars)	Effective rate (percent)	Amount (dollars)	Effective rate (percent)
$5,000	187.50	3.8	129.00	2.6	43.50	0.9
$7,500	375.00	5.0	315.00	4.2	195.00	2.6
$10,000	487.50	4.9	502.50	5.0	382.50	3.8
$12,500	646.88	5.2	586.88	4.7	466.88	3.7
$15,000	806.25	5.4	746.25	5.0	626.25	4.2
$20,000	1,125.00	5.6	1,065.00	5.3	945.00	4.7
$25,000	1,443.75	5.8	1,383.75	5.5	1,263.75	5.1
$30,000	1,762.50	5.9	1,702.50	5.7	1,582.50	5.3
$40,000	2,400.00	6.0	2,340.00	5.9	2,220.00	5.6
$50,000	3,037.50	6.1	2,977.50	6.0	2,857.50	5.7

[1] Assumes that single persons with less than $10,000 of AGI and married couples with AGI of $10,000 or less use the standard deduction. Single persons with $10,000 or more of AGI and married couples with AGI greater than $10,000 are assumed to have itemized deductions equal to 15 percent of AGI. Also assumes that all income is from wages and salaries and earned by 1 spouse.

TABLE 9.—VIRGINIA INDIVIDUAL INCOME TAX AND EFFECTIVE TAX RATE[1]

AGI	Single		Married, 2-person family		Married, 4-person family	
	Amount (dollars)	Effective rate (percent)	Amount (dollars)	Effective rate (percent)	Amount (dollars)	Effective rate (percent)
$5,000	63.00	1.3	50.00	1.0	26.00	0.5
$7,500	150.00	2.0	120.00	1.6	84.00	1.1
$10,000	265.00	2.7	235.00	2.4	175.00	1.8
$12,500	371.25	3.0	341.25	2.7	281.25	2.3
$15,000	478.63	3.2	447.50	3.0	387.50	2.6
$20,000	723.00	3.6	688.50	3.4	619.50	3.1
$25,000	967.38	3.9	932.88	3.7	863.88	3.5
$30,000	1,211.75	4.0	1,177.25	3.9	1,108.25	3.7
$40,000	1,700.50	4.3	1,666.00	4.2	1,597.00	4.0
$50,000	2,189.25	4.4	2,154.75	4.3	2,085.75	4.2

[1] Assumes that taxpayers with AGI of $12,500 or less use the standard deduction. Those with more than $12,500 of AGI are assumed to have itemized deductions equal to 15 percent of AGI. Also assumes that all income is from wages and salaries and earned by 1 spouse.

TABLE 10.—DISTRICT OF COLUMBIA INDIVIDUAL INCOME TAX AND EFFECTIVE TAX RATE AFTER ALLOWING FOR TAX SAVINGS FROM DEDUCTIBILITY OF STATE TAXES[1]

AGI	Single		Married, 2-person family		Married, 4-person family	
	Amount (dollars)	Effective rate (percent)	Amount (dollars)	Effective rate (percent)	Amount (dollars)	Effective rate (percent)
$5,000[2]	12.50	0.3	−25.00	−0.5	−80.00	−1.6
$7,500	270.00	3.6	217.50	2.9	127.50	1.7
$10,000	388.83	3.9	375.00	3.8	270.00	2.7
$12,500	449.68	3.6	436.00	3.5	356.76	2.9
$15,000	586.80	3.9	540.00	3.6	448.35	3.0
$20,000	804.38	4.0	761.25	3.8	660.00	3.3
$25,000	1,060.00	4.2	1,026.00	4.1	918.00	3.7
$30,000	1,279.00	4.3	1,258.00	4.2	1,156.00	3.9
$40,000	1,705.08	4.3	1,677.75	4.2	1,592.10	4.0
$50,000	2,033.38	4.1	2,010.50	4.0	2,131.10	4.3

[1] Assumes that single individuals with AGI of $10,000 or more and married couples with AGI greater than $10,000 will realize a tax savings by itemizing their State tax returns. The tax savings is equal to the reduction in Federal taxes which results from taking State income tax as a Federal itemized deduction. In calculating this tax savings we have taken account of the fact that some taxpayers who under present law itemize their Federal tax return would find it advantageous to switch to the standard deduction if the deductibility of the State income tax were eliminated. Examples of such taxpayers would be single individuals with AGI between $10,000 and $15,000, inclusive, and married couples with AGI greater than $10,000, up to and including $15,000. Calculations assume the allowable Federal standard deduction for 1976.

[2] Assumes maximum property tax credit of $115.

TABLE 11.—MARYLAND INDIVIDUAL INCOME TAX AND EFFECTIVE TAX RATE AFTER ALLOWING FOR TAX SAVINGS FROM DEDUCTIBILITY OF STATE TAXES[1]

AGI	Single		Married, 2-person family		Married, 4-person family	
	Amount (dollars)	Effective rate (percent)	Amount (dollars)	Effective rate (percent)	Amount (dollars)	Effective rate (percent)
$5,000	187.50	3.8	129.00	2.6	43.50	0.9
$7,500	375.00	5.0	315.00	4.2	195.00	2.6
$10,000	404.63	4.0	502.50	5.0	382.50	3.8
$12,500	504.57	4.0	467.01	3.7	387.51	3.1
$15,000	628.88	4.2	582.08	3.9	488.48	3.3
$20,000	836.25	4.2	798.75	4.0	708.75	3.5
$25,000	1,019.50	4.1	996.30	4.0	909.90	3.6
$30,000	1,168.50	3.9	1,157.70	3.9	1,076.10	3.4
$40,000	1,426.50	3.6	1,412.40	3.5	1,354.20	3.4
$50,000	1,618.13	3.2	1,607.63	3.2	1,571.63	3.1

[1] Under Maryland law, taxpayers may not itemize their State tax return unless they itemize their Federal return. We have assumed that single individuals with AGI of $10,000 or more and married couples with AGI greater than $10,000 will realize a tax savings by itemizing their State tax returns. The tax savings is equal to the reduction in Federal taxes which results from taking State income tax as a Federal itemized deduction. In calculating this tax savings we have taken account of the fact that some taxpayers who under present law itemize their Federal tax return would find it advantageous to switch to the standard deduction if the deductibility of the State income tax were eliminated. Calculations assume the allowable Federal standard deduction for 1976.

TABLE 12.—VIRGINIA INDIVIDUAL INCOME TAX AND EFFECTIVE TAX RATE AFTER ALLOWING FOR TAX SAVINGS FROM DEDUCTIBILITY OF STATE TAXES[1]

AGI	Single		Married, 2-person family		Married, 4-person family	
	Amount (dollars)	Effective rate (percent)	Amount (dollars)	Effective rate (percent)	Amount (dollars)	Effective rate (percent)
$5,000	63.00	1.3	50.00	1.0	26.00	0.5
$7,500	150.00	2.0	120.00	1.6	84.00	1.1
$10,000	253.95	2.5	235.00	2.4	175.00	1.8
$12,500	317.08	2.5	318.00	2.5	271.68	2.2
$15,000	391.96	2.6	369.55	2.5	322.75	2.2
$20,000	534.75	2.7	516.38	2.6	464.63	2.3
$25,000	676.51	2.7	671.67	2.7	621.99	2.5
$30,000	793.99	2.6	800.53	2.7	753.61	2.5
$40,000	999.81	2.5	1,001.26	2.5	974.17	2.4
$50,000	1,151.59	2.3	1,155.11	2.3	1,147.16	2.3

[1] Under Virginia law, taxpayers who itemize their Federal return must itemize their Virginia return. We have assumed that single individuals with AGI of $10,000 or more and married couples with AGI greater than $10,000 will realize a tax savings by itemizing their State tax returns. The tax savings is equal to the reduction in Federal taxes which results from taking State income tax as a Federal itemized deduction. In calculating this tax savings we have taken account of the fact that some taxpayers who under present law itemize their Federal Tax return would find it advantageous to switch to the standard deduction if the deductibility of the State income tax were eliminated. Examples of such taxpayers would be single individuals with AGI between $10,000 and $15,000, inclusive, and married couples with AGI greater than $10,000, up to and including $15,000. Calculations assume the allowable Federal standard deduction for 1976.

II. Taxing Nonresident Income

The taxation of nonresident income is an issue which surfaces with considerable regularity, particularly during periods of revenue scarcity. It is especially appealing to central cities which typically serve as employment sites during the day for large nonresident populations. The District of Columbia exemplifies this situation. Approximately 270,000 nonresidents work in the District, accounting for three out of five persons earning income in the District and roughly 60 percent of the total income earned.[24] These people and the income they have earned in the District leave at the end of each day and return to the suburbs which then serves as the site of income taxation. It is this income which the proponents of a nonresident income or payroll tax wish to tap. In this section of our paper we consider the legal restriction and precedents of a tax on nonresidents, the economic rationale for such a tax, the estimates of the gains and losses likely to accrue to the District and the suburbs under various proposals, and alternatives to the nonresident income tax. The District has what some have regarded as an unusual form of nonresident tax in its tax on unincorporated business. This is discussed briefly in the section considering alternatives to the nonresident income tax.

Legal restrictions and precedents

Section 602a.5 of the "Home Rule Act" specifically prohibits the government of the District of Columbia from levying a nonresident income tax. However, Congress has the power to legislate for the District of Columbia and could enact a nonresident income tax if it so desired. A nonresident income tax for the District has been proposed several times but has never passed. We expect it will be raised again.

There appears to be no question about the constitutionality of a nonresident income tax. Two court cases in the 1920's *Shaffer* v. *Carter*,

[24] "Congress, Suburbs Ambush Commuter Tax for District of Columbia," Kristina Goodenough, Tax Notes, Nov. 8, 1976, p. 5.

252 U.S. 37, and *Travis* v. *Yale & Towne Manufacturing Company*, 252 U.S. 60, seem to have settled the constitutionality issue, at least, for the kinds of nonresident income taxes which have been considered recently (See discussion of H.R. 11579 and H.R. 14621 below). The only constitutional issue of relevance is whether a proposed tax on nonresidents discriminates against the nonresident vis a vis the resident. A bill such as H.R. 14621, the one most recently considered by the District of Columbia Subcommittee which allows both residents and nonresidents the same deductions and exemptions, would clearly be constitutional.

There is ample precedence for taxing nonresident income. Taxing income at its geographic source has long been recognized as the right of States and nations whether or not the individual lives in that jurisdiction.[25] Typically, although not always, the tax paid to the jurisdiction in which it was derived can be credited against the tax paid in the home jurisdiction, if there is one.

At the present time all States which have a personal income tax do tax nonresident income. The form of the tax on nonresident income used by States has typically been different from the nonresident tax on income used by cities. There are three general positions which States have adopted toward the taxation of nonresident income.[26] The first is a "hands-off" policy toward nonresidents' income where neither of two States imposes a tax liability on the earnings of the residents of the other's State. This is typified by the Maryland-Virginia relationship. The second has the nonresident pay the tax to the state where the earnings occurred and then deduct the tax from his resident tax and is termed a "resident income tax credit" relationship. Under the third position, nonresidents deduct the amount of their income tax paid to their State of residence from their tax liability in the State where they work. This is called a "nonresident income tax credit." Cities, on the other hand, have typically used gross payroll taxes levied on both residents and nonresidents, although not always at the same tax rate. Fifty-nine cities nationally impose a tax on nonresident income with all but New York using a payroll tax. The District of Columbia shares some of the characteristics of both cities and Staes and if it were to levy a nonresident income tax, the District should consider the full range of alternatives available: Resident income tax credit, nonresident income tax credit, gross payroll tax, or some combination thereof.

Economic rationale for a tax on nonresidents

There are two major economic issues which need to be considered in a discussion on a nonresident income tax. The first involves the distribution of the old and poor populations among the various jurisdictions in a metropolitan area. The second involves the fiscal interaction among these jurisdictions.

It has frequently been charged that central cities are forced to house a disproportionate share of the populations which are most in need of

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[25] Federal-State Coordination of Personal Income Taxes," Advisory Commission on Intergovernmental Relations No. A–27 and Commuter Tax, Staff Study and Report for the Subcommittee on Fiscal Affairs of the Committee on the District of Columbia, Serial No. S–12, Washington, D.C., GPO, 1976.

[26] This discussion is based on "Taxing Nonresident Incomes in the Washington Area," The District of Columbia Municipal Research Bureau, Research Report No. 4, Sept., 1975, pp. 3–5.

public services at the very time that they are facing a declining tax base. Whether or not the central cities are being forced into this position by practices which limit the amount of low income and public housing, which limit the amount of public transportation, and so forth, or whether these populations choose to remain in the central cities is open to some debate. What is clear, however, is that many of the central cities and Washington in particular have disproportionate share of the populations which place the greatest demands on the public fisc. A few statistics validate the point: Washington, has 26 percent of the region's population but 53 percent of the poverty population; 41 percent of the elderly; 41 percent of the unemployed; and 42 percent of those with less than a high school education.[27]

The age profile in the District has deteriorated substantially since 1950. At that time of the District and its suburbs had similar shares of its population in the prime earning years and in the older age groups. By 1970 the share of the District's population in the 25–54 year old group was 36 percent; in the 55 year old plus group it was 21 percent. The comparable figures for the suburbs was 41 percent and 12 percent.[28] Furthermore, a declining birth rate in the District coupled with an unfavorable migration rate means that the age profile can be expected to deteriorate in the future.

The educational level-job skill requirement mismatch are as discouraging as an analysis of the age profile. The educational level of District residents is less at each of the major levels whereas employment in the metropolitan area requires a substantial amount of education: 40 percent of the jobs require a college degree and only 12 percent involve unskilled labor.[29]

The conclusion of even this brief analysis is that the District has a disproportionate share of the old, the poor, and the uneducated with an unfavorable age profile and little likelihood of being able to finance the services which these populations need. We will argue that because of the close economic ties which exist within the Washington metropolitan area, i.e., the District and the surrounding Maryland and Virginia suburbs, the continued support of these dependent populations should be viewed as a shared regional responsibility. To the extent this is true, we need to consider alternative ways of having the suburban areas contribute to their support. A non-resident tax on income is one way but it is clearly not the only way to finance needed services for the District.

The second major economic issue involves the fiscal interactions between the District and the suburban areas and the implications of these interactions. There are several types of interactions. The first is the contribution of the commuter to the District's general economy and indirectly to the public sector. The second type of interaction involves the value of services which commuters and other nonresidents receive and the amounts which they contribute directly to the public fisc. Valuation of these services can proceed either on a cost of service basis or on a broader, welfare or "willingness to pay" basis. As will be shown, the

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[27] "People and Government: Changing Needs in the District of Columbia, 1950–1970." The Washington Center for Metropolitan Studies, Eunice Greer, 1974, Figure 15 cited in "Commuter Tax," Staff Study and Report for the Subcommittee on Fiscal Affairs of the Committee on the District of Columbia, Serial No. S–12, Wash., D.C.: G.P.O., 1976, p. 18.

[28] *Ibid*, pp. 19–20.

[29] *Ibid*, p. 21.

basis of the valuation has decided effect on the interpretation of the outcome of the fiscal interaction.

According to a report prepared by the Maryland Department of Economic and Community Development,[30] Maryland commuters were estimated to spend $391.6 million at retail and parking establishments in the District in 1974. Total expenditures in the District in this sector in 1974 were about $1,887.1 million. Ot least an additional $55 million was spent in the Districts by residents who do not work in the District. Furthermore, it is estimated that these expenditures by Maryland commuters were responsible for supporting almost 12,500 D.C. employees (although not necessarily D.C. residents) involving a payroll of $66 million. Similar kinds of estimates could be calculated for Virginia commuters and noncommuter shoppers but were not readily available. It is sometimes concluded as a result of these statistics that commuters are already contributing their fair share to the District. This is a specious conclusion. Commuters and other nonresidents buy where it is convenient and/or where there is a low price. The fact that they buy some things in the District rather than where they live reflects their judgment of where they prefer to shop. If they felt there were a better place to shop, all things considered, they would do so. It is an error to conclude that the District is somehow getting a "free ride" because some nonresidents choose to shop there.

As mentioned earlier, there are basically two approaches to measuring the fiscal interaction between jurisdictions. The first is based on a cost of services approach. Under a cost of services approach, fiscal exploitation of the city is said to occur if the total net taxes which the suburbs pay to the city is less than the net cost of the services which the city provides to the suburbs. A cost of services approach is a useful measure if one's concern is whether an expanded level of services coupled with an increased tax is likely to pay for itself at least as far as the nonresident is concerned. It is also a useful measure if "fairness" or equity in taxation is defined in terms of payment equal to the cost of the services actually received. Using a strict cost of services definition of fiscal interaction, it appears that the District cannot be regarded as being exploited by its surrounding suburbs. Commuters pay a variety of taxes to the District including some property tax, sales tax, some of the corporate income tax, tobacco and motor fuel excise taxes, and so forth. According to study done by the Urban Institute, the commuter pays the District through taxes at least as much as the direct cost of the services provided to him.[31] The estimates presented by this study indicated a net fiscal flow from the suburbs to the city of roughly $15.5 million from Maryland to the District and almost $13 million from Virginia to the District. This amounted to between $21 and $40 per household per year from Maryland depending on assumptions about who pays the corporate income and property taxes and $30 to $44 per household per year from Virginia. If these figures are even approximately accurate, it would indicate that on the basis of a pure cost of services approach the suburbs cannot be regarded as exploiting the District.

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[30] "Impact Analysis of the Proposed District of Columbia Nonresident Personal Income Tax—An Update," Division of Research, Maryland Department of Economic and Community Development.

[31] K. Greene, W. Neenan, and C .Scott, "Fiscal Interaction in a Metropolitan Area," Lexington, Mass., Lexington Books, 1974, p. 146.

An alternative way to measure the fiscal interaction between the District and the suburbs is the welfare or willingness to pay approach. In this case benefits are determined on the basis of what an individual would be willing to pay for various public services and thus is based on a subjective evaluation of benefits. Furthermore, an allowance is made for external benefits or externalities, that is, it is recognized that public services may result in benefits to individuals other than the ones directly consuming the service. There is also explicit recognition that the value placed on the consumption of various public services, either by the direct program recipients or by those receiving the externalities, may vary with income. A major difficulty with the willingness to pay aproach as a pricing mechanism comes in estimating an appropriate value in exchange for various subgroups of the population. For regular or private goods, we can rely on the market. But in the case of public goods, we have no market test; here, we have to rely on voter behavior and attitudinal surveys.

On the basis of previous work by one of the authors of the Urban Institute study,[32] an estimate was made of the net benefit flow using the willingness to pay approach. This time the net fiscal flow is from the District to the Suburbs. The estimated net fiscal flow from the District to Maryland is about $48 million or about $137 per household. The fiscal flow from the District to Virginia is about $31 million or $120 per household.[33] Thus, even though there is a considerable net flow of taxes into the District, there can still be "exploitation" in the sense that some suburban residents are not paying what they would be "willing to pay" for the provision of various public services. It should be noted that according to the Urban Institute estimates, the bulk of the net expenditure flows associated with the fiscal flows as measured on a willingness-to-pay basis are poverty related expenditures. More specifically, of the total net benefit flows into Maryland, they estimate that 34 percent are associated with social services and 22 percent with health. The figures for Virginia are very similar. The conclusion they reach is that if the poor were distributed equally across political jurisdictions, and if expenditures on the poor were the same per capita, the net fiscal flows between the District and the suburbs would negilible.

Thus, our response to the question "Is the District being exploited by the suburbs?" depends on how we define the benefits from public services. If we define benefits in terms of the costs of delivering the services and if we assume there are no welfare gains to higher income people from redistributive expenditures to the poor, then there is no exploitation. In fact, according to the Urban Institute estimates, the suburbs more than pay for the services provided them through their contribution via sales taxes, property tax, corporate income tax, motor fuel excise taxes, and so forth. If, however, we define benefits in terms of subjective evaluation or willingness to pay, as the authors of the Urban Institute study as well as other economists regard as appropriate, then there is exploitation. Furthermore, the primary cause of the exploitation is that the District supports a major share of the poor people of the region and, also, the higher income people are believed

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[32] W. B. Neenan, "Political Economy of Urban Areas," Chicago: Markham, 1972 pp. 53–139.

[33] K. Greene, W. Neenan, and C. Scott, *Op Cit*, pp. 146–156.

to support more of both redistributive as well as nonredistributive public services.

If we accept the existence of this type of exploitation, there are at least three remedies which could be regarded as appropriate: Federalization of the financing of major social services; a metropolitan payment to the District; and a tax on nonresident income.

Federalization of major social services has been discussed at several junctures during the last decade, particularly in the context of welfare reform. An initial step has in fact been taken towards the federalization of social services with the introduction of the Supplemental Security Income program in the early 1970's. Since a major cause of the District's financial problems as well as its exploitation by the suburbs revolves around the disproportionate share of the poor who live in the District, federalization would be an indirect solution to at least a portion of the problem. There are several problems with this approach. The first and most obvious is that its implementation is completely outside the control and jurisdiction of the District. In addition, the level of support is unlikely to be as high as it is in the more generous states which means that these areas are likely to institute their own support programs on top of the Federal level. Also, people who do not fit into the eligibility categories under existing welfare programs would still not be covered. Finally and most importantly, the burden on the District associated with its disproportionate share of the poor lies more in the auxiliary services it has to provide them and their inability to contribute to the tax base rather than from the direct support requirements. Nonetheless, federalization of welfare would provide the District with some relief.

The second remedy involves a payment to the District from the other jurisdictions in the metropolitan area. The purpose of this payment would be to compensate the District for the disproportionate share of the metropolitan area's poor which reside in the District, recognizing that the metropolitan area is essentially a single economic unit despite the diversity of political jurisdictions within the area. Such a payment would recognize an interdependence among the jurisdictions which many of those who left the District sought to sever. This metropolitan payment should not be confused with the Federal payment. The purpose of the Federal payment is twofold. First, it compensates the District for some of the added expenses which it incurs being the capital of the country. Second, it compensates the District for the fiscal loss which occurs because of the U.S. constitutional restrictions on the nature of its political boundaries.[34] It has been suggested that the Federal payment be increased to make up for any additional expenses which result from fiscal interactions within the area. Such an increase would help the District in that the District would be provided with some additional revenue, but it is difficult to justify an increase in the Federal payment for this purpose.

The use of a metropolitan payment seems to be the solution which is easiest to justify at a purely conceptual level. It recognizes the fiscal advantages which accrue to all the surrounding jurisdictions from having the poor reside in the District rather than in their own areas

[34] See paper by Michael Bell on the Federal Payment, Tax Revision Commission, August, 1977, for further discussion of this topic.

and forces them to compensate the District for this service. It also recognizes the essentially single economic area which exists despite the political fragmentation. There are, however, several problems to this approach. First, it does not recognize the closer ties and more essential interdependence with the District which exist for the commuter. The District itself also has no legal authority to enforce payment. Such legal authority which would recognize the essential unity of the area without forcing a metropolitan government on the area presumably could be granted by the Federal Government. Finally, this solution is unlikely to have much political appeal although ultimately it may be viewed as being less disruptive than many of the other remedies. It may be argued that this would constitute taxation without representation since suburbanites could not influence the way the money would be spent. This is, of course, true of any nonuser tax which individuals pay to a place other than their place of residence, e.g., sales tax. A variant of the approach is the political consolidation of the metropolitan area. This seems to be an unnecessarily heavyhanded way to solve the present problem and no more politically appealing than the use of a metropolitan payment.

The third remedy involves the use of a tax on nonresident income earned in the District. There are several advantages to this approach. First, there is clear legal precedence. Although it would depend on the precise form adopted, a nonresident income tax should be easy to administer. It recognizes the close ties between the commuter and the District and dependence on the economic well-being of the District. The major disadvantage of the tax on nonresident income is that it is unable to tap the income of the residents of the surrounding jurisdictions who enjoy a net fiscal gain from the District particularly because of the disproportionate share of the poor who reside in the District. Political and legal feasibility, however, may make this the most appealing way to remedy the problem.

Alternative forms of the nonresident income tax

As reviewed earlier, states which tax nonresident income typically adopt either a resident income tax credit relationship or a nonresident income tax credit relationship. In the former case, the individual pays the tax to the place where the income is earned and deducts this tax from his resident state tax liability. In the latter case, the individual deducts the income tax paid to his place of residence from the place where he works. Of these two arrangements, the resident income tax credit approach seems the rational approach to take since the only income subject to tax in the place of work is the income which is earned there. The use of the credit then assures that the individual will not have to pay an income tax twice on the same income.

The major alternatives in terms of the form a tax on nonresident income should take are a gross wages tax or a graduated income tax similar in form and structure to the District's tax on residents except at a fraction of the rates. Theoretically, the tax could use any base and rate structure thought to be desirable but, in fact, it would make little sense to use an income tax which is different from the tax it levies on its own residents and would probably be unconstitutional. The only exception might be a gross receipts tax. The major justification for

this deviation would be its simplicity. A disadvantage of such a tax is that it does not provide the progressivity associated with a progressive income tax. A gross receipts tax can be made more progressive through the use of graduated rates or exemptions, but this type of tax is difficult to administer and is therefore rarely put into practice. In addition, the constitutionality of such a tax is less clear since the argument could be made that the District would be discriminating against the commuter vis a vis the District residents because of the differences in exemptions and deductions associated with the two taxes.

If a gross wages tax is not used, then the obvious alternative is to use the tax base and rate the tax rates the District applies to its own residents except at a fraction of the rates. Any changes introduced in an effort to increase conformity would be included. Any other changes, even if meritorious on their own, would increase administrative costs excessively and should not be advocated. In accordance with the resident income tax credit approach, nonresidents should be allowed a credit against their resident income tax liability. It is presumed that other jurisdictions would adopt a similar policy and that District residents who work elsewhere would be subject to an income tax at the place of work and then allowed a credit against their District tax. The rationale for applying only a fraction of the rates applied to District residents is that whatever the precise measure of the burden which commuters and other metropolitan residents place on the District, they receive substantially less benefits from District services than do District residents.

The Subcommittee on Fiscal Affairs considered two bills in 1976 which approximate the two alternatives just discussed. H.R. 11579 calls for 1½ percent tax on gross wages and salaries earned in the District after an initial exemption of $6,500. The tax would apply to members of Congress and their staff and would eliminate the unincorporated business franchise tax. The estimated net D. of C. revenue to be raised by such a tax as of Fiscal 1978 is $30.9 million. H.R. 14621 was the "clean" bill reported out by the Subcommittee. This bill called for the extension of the District's income tax to base all nonresident income earned in the District to be taxed at a rate equal to one-third of the resident income tax rate. This tax would also apply to members of Congress and their staff and would result in the repeal of the unincorporated business franchise tax. The estimated revenue from this bill as of Fiscal 1978 if $59.5 million.[35] Estimates of the revenue gains and losses to the District and surrounding jurisdictions as well as estimated tax liabilities associated with each bill are shown below.

TABLE 13.—ESTIMATES OF REVENUE GAINS AND LOSSES FROM H.R. 11579 AND 14621 FOR FISCAL YEA 1978R

[Dollar amounts in millions]

	H.R. 11579	H.R. 14621
Net District revenue yield	$30.9	$59.5
Net revenue loss to Maryland	25.0	39.1
Net revenue loss to Virginia	21.0	32.5

Source: Table 2, p. 11, "Commuter Tax" Staff Study and Report for the Subcommittee on Fiscal Affairs of the Committee on the District of Columbia, Sept. 29, 1976, Government No. S-12.

[35] "Commuter Tax," Staff Study and Report for the Subcommittee on Fiscal Affairs of the Committee on the District of Columbia, Serial No. S-12, Washington, D.C. : G.P.O., 1976, p. 2.

TABLE 14.—EFFECTIVE RATES ON VARIOUS INCOME CLASSES FOR A FAMILY OF 4

Nonresident's income level	Tax burden		Effective rate (percent)	
	H.R. 11579	H.R. 14621	H.R. 11579	H.R. 14621
$3,000	0	0	0	0
$5,000	0	18.33	0	.37
$7,000	7.50	33.33	.10	.47
$10,000	52.50	97.00	.53	.97
$15,000	127.50	187.00	.85	1.25
$20,000	202.50	306.00	1.00	1.54
$25,000	277.50	440.00	1.10	1.76
$30,000	352.50	576.66	1.20	1.91
$50,000	652.50	1,190.00	1.30	2.50

Source: Table 3, p. 13, "Commuter Tax" Staff Study and Report for the Subcommittee on Fiscal Affairs of the Committee on the District of Columbia, Sept. 29, 1976, Government No. S–12.

A tax on nonresident income, particularly one such as H.R. 14621, would be relatively easy to administer and would compensate the District in a substantial way for the disproportionate share of the poor who reside in the District. It would also permit the District to repeal the unincorporated business franchise tax, at least as it is presently constituted. A brief discussion of this tax is presented below.

Unincorporated business tax

The unincorporated business tax is a tax on business income which is applied to any business entity not incorporated. The tax is paid at the same rate as the corporate tax although there are some differences in how it is applied. For the unincorporated business tax, a payroll limitation is basically of 30 percent of net profit. At the time the bill was enacted, the tax was limited to business involving capital investment with personal service businesses exempted. This exemption was removed 2 years ago and the tax was extended to personal services with some alterations in the tax. The reasonable allowance for salaries for capital business remains at 30 percent; the allowance for noncapital businesses is 70 percent. The effective rate of the tax is approximately 3 percent for capital business and 6 percent for noncapital businesses.

There are two major issues with respect to this tax. First, was the extension of the tax to personal services a valid extension? Second, is there any conceptual justification for such a tax? Although few areas tax professional income (New York City is one of the few exceptions), there is no obvious reason for excluding personal services once a difference is acknowledged in what constitutes a reasonable limitation on the share of income which can be devoted to salaries. Thus, if the tax is to exist, it should cover personal service businesses. The basic rationale for the tax is somewhat more difficult to justify. The primary justification is that it provides a way of tapping income which is earned but does not stay in the District. It clearly violates any sense of conformity with the Federal base. Normally such income is included as part of the individual's personal income and subject to personal income tax rates. If this treatment were instituted in the District, individuals earning such income who were not residents of the District would escape District taxation. Under present law, all unincorporated businesses pay the unincorporated business tax but District residents can deduct the tax from the District income tax

liabilities whereas Maryland and Virginia residents are unable to do this. Some economists view the tax as a form of nonresident income tax. A tax on nonresident income such as H.R. 14621 is a much more rational way to tax nonresident income. If such tax were instituted, there would be no justification for the unincorporated business tax, at least in its present form. A low level "franchise tax" levied on business in exchange for the privilege of doing business in the District could still be justified.

III. Tax Credits

Concern about the regressivity of state and local taxes has led a variety of States to the use of income tax credits. The most common type of credits are a credit for the sales tax, and a "circuit breaker form" of property tax relief. As of 1976, 8 States had some form of credit for sales tax or other consumption taxes and 25 States (including the District of Columbia) had circuit breaker programs for the relief of property taxes.[36] Three States, Hawaii, Massachusetts, and New Mexico, have a more comprehensive tax credit, intended to provide tax relief for most of all taxes paid by low income persons rather than credits for specific taxes.

The District of Columbia had a sales tax credit from fiscal year 1970 to fiscal year 1976. During that period, groceries, laundry and dry cleaning, and nonprescription drugs were taxed 2 percent and a vanishing credit was granted to residents earning less than $6,000. In fiscal year 1976, these items were exempted from the sales tax and the credit was eliminated. The District's circuit breaker program was first implemented in calendar year 1975 and modified in 1976. It currently provides a sliding credit for residents who have a "household gross income" (includes, in addition to wages, salaries and dividends such items as income, social security, welfare assistance, sick pay, pensions and annuities, and support money) of less than $7,000 and who rent or own their principal place of residence in the District. Both of these credits are discussed in some detail in the Commission papers covering the sales tax and property tax respectively. The discussion here is limited to a brief discussion of the revenue implications of a credit versus an exemption of board classes of commodities and some estimations of the revenue implications of a credit versus an exemption, where appropriate. We consider the sales tax credit first and then the property tax circuit breaker.

Sales tax credit

A major problem with the sales tax is that it is regressive—that is, tax liability as a percent of income declines as income increases. As noted in the sales tax paper, Pechman reports an effective tax rate for a 5-percent sales tax that varies between 3.8 percent for families with income less than $3,000 to 1.2 percent for families with income above $100,000.[37] Papke and Shahen report an effective tax rate for a broad based retail sales tax that indicates a similar differential across income classes.[38] There are basically two ways to alleviate this problem. The

[36] "Significant Features of Fiscal Federalism, 1966–67," Advisory Commission on Intergovernmental Relations, Washington, D.C., March 1967.

[37] Joseph Pechman, "Federal Tax Policy," The Brooking Institution, Washington, D.C.

[38] James Papke and Timothy Shahen, "Optional Consumption-Base Taxes: The Equity Effects of Tax Credits" National Tax Journal, September 1972 p. 482.

first is to exempt a major category of consumption such as food and drugs from the sales tax base. The second way is to make the base as broad as possible but to provide a credit to low income families which approximates all or part of their sales tax liability. Although either approach can make what is otherwise a regressive tax into proportional tax or even a slightly progressive one, the use of a broad based tax with a credit is much more efficient in terms of the revenue loss to the treasury. The reason is that most people are not poor and limiting the credit to those that are is much less costly than removing a major commodity from the tax base.

The latter is like granting a credit to everyone who purchases food in the community, nonresidents as well as residents. In fact, it is like granting a credit which increases with income since the nonpoor tend to spend absolutely more on food than the poor even though they spend proportionately less. The exemption of services tends to be even worse since the consumption of services tends to be more proportional than the consumption of food. A few examples will illustrate the points made above. Using the U.S. Department of Labor, Bureau of Labor Statistics general purpose tape from the 1960–61 "Survey of Consumer Expenditures," Papke and Shahen found that a food exemption transforms a regressive sales tax into one which is proportional over most income classes. They conclude that if achieving a proportional tax rate were the sole objective, then exempting food consumed at home is not a bad policy. However, they also consider the effect of uniform tax credits, per capita and per family, and the effects of three variable vanishing tax credits. They found that per dollar of revenue reduction, a uniform per capita credit makes the tax less regressive than food exemption. A uniform per family credit makes the distribution progressive for families with income up to $8,000 but it becomes regressive for families with incomes over $10,000. When the comparison is limited to equal yield tax combinations, high income families benefit only from a good exemption.[39]

The three vanishing credits Papke and Shahen consider are a per capita credit which varies by income, a per family credit which varies by income and a per family credit which varies by income and family size. All three were constructed to become zero for families with incomes greater than $6,000. In terms of reducing regressivity, they found that variable vanishing credits are more effective than over the counter food exemptions, given the assumption of equal yield tax combinations. The reason is that under a variable vanishing credit, the entire amount of relief is allocated to families with income less than $6,000 rather than distributing the relief over all income classes.[40] There is only one area in which a vanishing sales tax credit is distinctly inferior to an exemption and that is with respect to horizontal equity. The principle of horizontal equity implies that persons with equal income should be treated equally. According to the Papke and Shahen study, a uniform per capita credits results in slightly greater horizontal equity than a food exemption, a uniform per family credit leaves horizontal equity unchanged and all three vanishing credits reduce horizontal equity relative to a broad based sales tax. The reason for the latter is that consumption of a particular commodity varies a

[39] *Ibid.* P. 482.
[40] *Ibid.* P. 483–485.

lot within income classes and credit which is a function of income and/or family size therefore differentially affects otherwise similarly circumstanced individuals.

Papke and Shahen conclude that a balancing of the dual objectives of horizontal equity and vertical equity implies a broad based retail sales tax including services, with a variable vanishing credit based on family characteristics.[41] We agreed with this conclusion. If horizontal equity is of overriding concern, increased use should be made of the income tax. A broad based income tax results in greater horizontal equity than a retail sales tax. To the extent that there is some concern over too much reliance on the income tax because of possible work or savings disincentives, the use of a broad based sales tax with a variable credit becomes an attractive option.

The attractiveness of a broader based sales tax with a variable credit rather than a narrower based sales tax with exemptions becomes more obvious when the revenue implications of one option versus the other are considered explicitly. The Department of Finance and Revenue for the District of Columbia estimates that the revenue loss associated with removing the 2-percent tax on groceries, non-prescription drugs and dry cleaning (and presumable eliminating the credit) was $6.8 million.[42] We estimate that the amount associated with the credit for calendar year 1974 was less than $650,000 assuming all who were eligible took the exemption (See Appendix 1 for an explanation of the estimation procedure.) If the District of Columbia had taxed groceries, non-prescription drugs and dry cleaning at the 5-percent rate which applies to other items, we estimate that the increased revenue might have been as high as $18.1 million. However, the increased revenue associated with such a rate increase would probably be less than proportional since some consumers would buy less of the taxed items and some might shift their purchases of these items out of the District. It is possible that the revenue increase associated with this change might be as low as $14.9 million although this much slippage seems unlikely. (See related discussion in the Commission paper on the Sales Tax.) If these currently exempted items were to be taxed at 5 percent, we would want to increase the amount of the credit at least proportionately. This would imply the following credit structure:

$15 per income tax exemption if AGI=$2,000.
$10 per income tax exemption if AGI=$2,000–3,999.
$5 per income tax exemption if AGI=$4,000–5,999.

We estimate that the cost of this credit would be about $1.6 million on the basis of fiscal year 1974 returns. Alternatively, the District may wish to offer a credit to the near poor as well as to the poor. One alternative would be the following:

$15 per income tax exemption if AGI=$3,000.
$10 per income tax exemption if AGI=$3,000–5,999.
$5 per income tax exemption if AGI=$6,000–7,999.

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[41] *Ibid.* P. 486.
[42] "D.C. Tax Facts fiscal year 1977" Department of Financial and Revenue, Fiscal Planning and Research, Government of the District of Columbia, February 1977 p. 43.

We estimate that the cost of this credit would be about $2.5 million. These estimates were made using the "Statistics on Income" published by the D.C. Department of Finance and Revenue. Largely because some low income persons do not file income tax returns, we think that the above figures may underestimate the cost of a vanishing credit. If we adjust the population implied on the basis of tax returns to other population figures reported for the District, we estimate that the credits would cost $2.0 million and $3.1 million respectively for calendar year 1974.

This means that if the District were to remove the exemptions now placed on groceries, drugs, and dry cleaning and tax these items at a rate of 5 percent while at the same time it also put into effect a sliding credit which varies from $15 per exemption for those with an adjusted gross income of less than $3,000 to $5 per exemption for those with an adjusted gross income of $6,000–$8,000, it would show a net revenue gain of at least $12 to $15 million. Furthermore it would have transformed what we estimate was a clearly regressive tax, especially for the lowest income group, into a tax which is essentially proportional until the $12,000–$15,000 range and then regressive thereafter. Table 15 shows the effective tax rate (tax liability divided by income) for each income class under the existing tax structure and under a tax structure where the exemptions are removed and a credit varying from $15 to $5 per income tax exemption is in effect.

From the discussion presented above, it is clear that much of the regressive nature of the sales tax can be alleviated by the use of a vanishing credit. Although a good, drug, and dry cleaning exemption can make the tax close to proportional except in all but the lowest and highest income classes, it is a very inefficient way to achieve proportionality in terms of the revenue cost to the treasury. The one dimension in which the exemption is superior is in terms of horizontal equity. To the extent that this is of concern, greater reliance should be placed on a broad based income tax or else a credit could be devised which accurately reflects the family characteristics which determine consumption. The credits we have considered in this section represents only three options. Many others could be devised. Whatever value of credit is chosen, the income concept used should be the one used for income tax purposes. The administrative burdens of doing otherwise would far outweigh any gains in equity.

Property tax credit

Property tax relief is extremely popular. According to an ACIR Information Bulletin, every state as of July 1, 1973 had some form of property tax relief on its books. Under the circuitbreaker concept, a tax rebate or credit is provided whenever property tax payments exceed a certain percent of income. This is the most common type of property tax relief and as indicated earlier, is the one used in the District of Columbia.

TABLE 15.—EFFECTIVE SALES TAX RATES UNDER THE CURRENT STRUCTURE AND WITH FULL TAXATION AND A SLIDING CREDIT

[In percent]

Income class	Effective tax rate; current structure	Effective tax rate; no exemption and sliding credit
Under $3,000	3.1	2.4
$3,000 to $3,999	2.3	2.4
$4,000 to $4,999	1.9	2.3
$6,000 to $6,999	1.7	2.4
$7,000 to $7,999	1.7	2.3
$8,000 to $8,999	1.6	2.3
$10,000 to $11,999	1.5	2.2
$12,000 to $14,999	1.5	2.1
$15,000 to $19,999	1.4	1.9
$20,000 to $24,999	1.3	1.5
$25,000 plus	.9	1.2

Source: "Average Annual Expenditures for Commodities and Service Groups Classified by Nine Family Characteristics, 1972 and 1972 Consumer Expenditure Survey Series: Interview Survey 1972 and 1973," U.S. Department of Labor. Report 455-3.

Table 15 assumes a sliding credit of $15 per exemption for AGI less than $3,000, $10 per exemption for AGI of $3,000. to $6,000 and $5 per exemption for AGI of $6,000 to $8,000 and 3 exemptions per family.

The basic rationale for the property tax credit is the same as the one for the sales tax, i.e., to reduce the regressivity otherwise associated with the tax. Judgments regarding the regressive nature of the property tax are based on the assumption that the tax is borne by the users of the commodities produced by the property being taxed, i.e., by homeowners, by renters and by consumers of commodities produced with taxes nonresidential property in the form of higher prices.[43] This conclusion also assumes that viewing property tax liability relative to current income is a good measure of the burden of the property tax. Given these assumptions, the property tax is definitely regressive. According to ACIR estimates, the effective tax rate varies from 17 percent for families with income less than $2,000 to about 3 percent for families with incomes greater than $25,000.[44] Except for the very lowest income class, these estimates are close to the ones we have estimated would exist in the absence of a credit as shown in Table 4. These estimates were made using U.S. Bureau of the Census data on owner occupied homes for the Washington metropolitan area and at best should be regarded as being only approximately correct. The procedure used in making these estimates is described in Appendix 3.

It is clear that the full use of a credit such as the one in the District substantially reduces the regressivity of the property tax. Table 16 shows the effective tax rate with the credit currently in effect in the District for individuals living in owner occupied homes. Except for the lowest income class, which is presumably donated by persons who are only temporarily in that income class, the tax is approximately proportional up to about $10,000 and then regressive thereafter. Table 4 also shows estimates of the effective tax rate for renters with and without the credit. The assumption used in calculating these estimates is that 15 percent of the rent is property tax and that the tax

[43] The discussion of property tax incidence is based on Henry Caron "What Do Circuit Breaker Terms Accomplish" in Property Tax Reform, George Peterson, editor, John Lincoln Institute and Urban Institute, Washington, D.C.; 1973.

[44] John Shannon. "The Property Tax: Reform or Relief on Property Tax Reform," George Peterson, editor, John Lincoln Institute and the Urban Institute, Washington, D.C., 1973, p. 27.

is paid by the renter. This is the assumption built into the credit. Except for the very lowest and highest income classes, the use of this type of credit makes the property tax nearly proportional for renters, given the assumptions about incidence.

Assuming that some portion of the property tax is paid by renters, extending the property tax credit to renters clearly represented an improvement in equity. If there is to be a credit, there is little justification for allowing only homeowners to claim the credit. This is particularly important because of the existing tax advantages which favor the homeowner vis a vis the renter, e.g., the deductibility of property tax and mortgage interest and the emission of the imputed rental value of owner occupied homes.

TABLE 16.—EFFECTIVE PROPERTY TAX RATES FOR OWNER-OCCUPIED HOMES AND RENTERS, WITH AND WITHOUT THE EXISTING CREDIT

[In percent]

Income class	Owner-occupied homes		Renters	
	Without credit	With credit	Without credit	With credit
Less than $2,000	42	19	12	6
$2,000 to $2,999	16	7	8	3
$3,000 to $3,999	12	8	6	4
$4,000 to $4,999	9	6	5	4
$5,000 to $5,999	8	7	4	4
$6,000 to $6,999	6	6	4	4
$7,000 to $7,999	5	5	3	3
$10,000 to $14,999	4	4	2	2
$15,000 to $24,999	3	3	2	2
$25,000 plus	2	2	1	1

Source: Metropolitan Housing Characteristics, U.S. Bureau of the Census, Maryland, Virginia, SMSA, tables A–1 and A=2

There are several arguments against the property tax credit. The first is that within any income classes, the credit is worth more for families with more expensive houses than for families with less expensive houses. Thus, benefits tend to increase with net worth within an income class. This is not an objective generally expressed. Limiting the credit to the first $400 of the property tax mitigates against this problem but it clearly still exists. The second argument against the use of a credit is that the observed regressivity exists primarily because the tax liability is measured against current income. Housing expenditures, however, are widely believed to depend on "normal" or "permanent" (expected income over time) income and it has been argued that the tax liability ought to be measured against permanent income rather than current income. Some relatively recent studies estimating the elasticity or responsiveness of the (residential) property tax to permanent income have reported income elasticity estimates near or greater than one.[45] This is much higher than earlier estimates. The reason is because the earlier estimates were based on current income rather than permanent income and indicates the importance of the income concept used in distributing tax burdens. The final argument against the credit is that the regressibility of the property tax is based

[45] George Peterson "The Regressivity of the Residential Property Tax" Working Paper 1207–10 Washington, D.C. The Urban Institute Nov. 1972 P. 15, and Geoffrey Carliner "Income Elasticity of Housing Demand" Institute for Research on Poverty, Discussion Paper 144–72, Nov. 1972 p. 8.

on incidence assumptions (that is, who bears the ultimate burden of the tax) which are obsolete. Under the traditional view, the property tax is borne by the users of the goods or services produced on commercial property. In this case the tax is essentially viewed as an excise tax and is regressive, particularly if measured against current income.[46] Under the newer view, which is based on general equilibrium tax theory, the property tax is borne by owners of capital which would imply that it is at least proportional and probably progressive.[47] Recently it has been suggested that local differentials in property tax rates are likely to be borne by local consumers and to some extent by the owners of locally immobile factors.[48] While this issue of incidence has not yet been completely settled, it seems to us that there is enough indication that the tax is not as regressive as it was once regarded, particularly in relation to permanent income. If this is true, the wisdom of a property tax credit ought to be reconsidered.

If the District is to continue the use of a property tax credit, it ought to use the same income concept as is used for tax purposes. Although it can be argued that a broader definition of income would be conceptually preferable, the administrative costs and the additional costs to the taxpayer (e.g. in terms of added recorded-keeping) of using a more comprehensive definition argue strongly against its use. Because of poor participation, the first year's cost for the credit was $400,000 rather than the anticipated $6 million. It is reasonable to assert that a large reason for this was due to the use of "household income" rather than the adjusted gross income used for tax purposes. If the point of the credit is to rebate property tax payments to low income persons, this sort of an obstacle defeats the purpose of the credit.

Comprehensive tax credits

A proliferation of tax credits can be both costly in administrative terms as well as pointless in terms of their impact on effective tax rates since the implications of these various credits may not be compatible with each other. Several economists have suggested the use of a single comprehensive credit than the use of specific credits designed to relieve the impact of specific taxes. The notion underlying such credit is that the best position for State or local governments to take with respect to the distribution of income is one of neutrality and that this is best exemplified by an overall rate structure which is proportional.[49] New Mexico has such a credit. Hawaii also combined several credits into a single comprehensive credit. If the District were to take such an approach, it would be necessary to estimate the total tax liability of individuals and families by income class. A sliding credit could then be devised which when in effect would make the tax structure approximately proportional. The primary drawback to this approach is the potential loss in revenue to the District. While the District could obviously compensate for this revenue loss by increasing the tax rates on taxes which have at least a proportional incidence, there

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[46] Richard Musgrave et al., "Distinction of Tax Payments by Income Groups: A Case Study for 1948." National Tax Journal, March 1951.

[47] Peter Miezkowski, "The Property Tax: An Excise Tax of a Profits Tax?" Journal of Public Economics, Vol. April 1972.

[48] Charles McClure, "The New Review" of the Property Tax: A Caveat, National Tax Journal, Vol. XXX, March 1977.

[49] Gerald Boyle, "A Comprehensive Tax Credit for Achieving Proportionality in State and Local Tax Structures," National Tax Journal Vol. XXVII Dec. 1974.

needs to be some concern about establishing too large a differential tax rate on middle and upper income people who live in the District versus those who live in the suburbs. This topic is examined elsewhere in the Commission Report.

Appendix 1

ASSUMPTIONS USED IN ESTIMATING THE COSTS OF VANISHING SALES TAX CREDITS

The data used in estimating the costs of the various sales tax credits came from Table 4, Statistics on District of Columbia Income, Fiscal Year 1974 Returns published by the Department of Finance and Revenue, District of Columbia, June 1976. Table 4 provides the number of returns, the number of taxpayers and the number of dependents by Adjusted Gross Income Class. The number of exemptions per AGI class in calculating the credit equals the number of taxpayers plus the number of dependents.

The population implied on the income tax returns is substantially less then the population reported elsewhere for the District. Since the underreporting appears to be about 26 percent, we increased the dollar value of the credit in each AGI class by this amount to compensate for the underreporting.

The estimated distribution of the credits is as follows:

	Estimated directly (thousands)	Amount (thousands)	Corrected for undercount (thousands)
For a credit of:			
$6 per exemption if AGI $2,000		$272.6	
$4 per exemption if AGI $2,000 to $3,999		235.8	
$2 per exemption if AGI $4,000 to $5,999		138.2	
Total		646.5	
$15 per exemption if AGI $2,000	$681.4		$858.6
$10 per exemption if AGI $2,000 to $3,999	589.5		724.8
$5 per exemption if AGI $4,000 to $5,999	345.4		435.2
Total	1,616.3		2,036.6
$15 per exemption if AGI $3,000	1,125.4		1,418
$10 per exemption if AGI $3,000 to $5,999	984.4		1,240
$5 per exemption if AGI $6,000 to $7,999	377.3		475
Total	2,487.1		3,133

Appendix 2

CALCULATING EFFECTIVE TAX RATES FOR THE EXISTING SALES TAX AND FOR A SALES TAX WITH TAXATION OF EXEMPTED ITEMS AT 5 PERCENT AND A VANISHING CREDIT

First we estimated the tax base applicable to the regular 5 percent rate, exclusive of major items taxed at differential rates, such as restaurants and alcohol and also exclusive of items currently exempt. Following Fisher's sales tax paper, this is defined as:

(current consumption expenditures) (food) (alcoholic beverages) (shelter expenditures) (transportation expensed) + (vehicle purchases) (health care costs) (personal care costs) (recreation) + (boat purchases) (other recreation) (education expenses).

We separately list food consumed at home and away from home and tax them at 5 percent (for the option without the exemption) and 8 percent respectively. Alcoholic beverages are taxed at 7 percent assuming that half is consumed at home and half at restaurants. We were unable to include the estimated tax on nonprescription drugs since this item was not included in Report 4553, of the Consumer Expenditure Survey Series, which served as the source of our estimate of consumer expenditures by income. We did include the tax on dry cleaning.

The credit was calculated as though it were a function of family income rather then AGI since consumption expenditures are only available using this income concept.

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Appendix 3

ASSUMPTIONS USED IN CALCULATING EFFECTIVE TAX RATES FOR OWNER OCCUPIED HOMES AND RENTERS, WITH AND WITHOUT CREDITS

We begin with the estimates of median value of owner occupied homes by income class and median value of gross rent by income class for the Washington SMSA for 1970. We assumed that the median value of owner occupied homes increased by 40 percent since 1970; the median value of gross rent increased by 30 percent since 1970, family income increased by 30 percent since 1970. The assumed tax rate is $1.83 per $100 assessed value and assessed value equals market value. The credit used is the one defined by calendar year 1975 law. We further assume that renters pay property tax equal to 15 percent of their gross rent.

The assumption that income increased only 30 percent between 1970 and 1975 is clearly conservative. However, we are most concerned with the lower income groups and this estimate is probably not too bad for this group.

INHERITANCE AND ESTATE TAXATION

(By Gerard M. Brannon, Professor of Economics, Georgetown University)

The District of Columbia, like the other states (except Nevada) has a modest death tax which produces about 1.0 percent of D.C. revenues.[1] Like any tax, even small ones, the D.C. death tax should be reviewed from time to time. A review in 1977 is particularly appropriate because of the significant Federal death tax changes in 1976.

Our review indicates that the present form of the D.C. tax is simultaneously quite complicated and quite arbitrary in the way it distributes burdens between heirs. It overtaxes property left to a surviving spouse and undertaxes property divided among large families. It overtaxes many small estates and undertaxes large estates. Our basic proposal is that the tax be converted to an estate tax and structured to raise more revenue by about 50 percent. If the cumbersome inheritance tax framework is retained, the tax should be greatly revised with a target of higher revenues, and a complete restructuring of the categories of heirs.

Section 1 briefly summarizes the D.C. death tax and brings out its peculiar relation to Federal death taxes (through the Federal credit for state taxes, the deduction for the Federal tax, and the different definition of tax base.)

Section 2 summarizes the changes in the Federal death taxes that were enacted in the Tax Reform Act of 1976. These changes will slightly change the amount payable as D.C. taxes. Of greater importance is the pattern of Federal changes which was to reduce taxes in some cases which D.C. taxes heavily and to increase taxes in some cases which D.C. taxes lightly. This requires some re-examination of the logic of the D.C. provisions.

Section 3 contains our preferred recommendations for revision of the D.C. death tax in the direction of an estate tax. In this section we criticize not only the inheritance form of tax but also the peculiar structure of inheritance tax in D.C.

Section 4 is a back-up proposal about how to modify the inheritance tax in D.C. if it is dictated that we must keep this form of tax.

I. The D.C. Death Tax

D.C. imposes both an inheritance and an estate tax. An inheritance tax is imposed on the heirs and the rate is determined for each heir on the basis of that heir's relation to the deceased and on the basis of the size of that inheritance. An estate tax is imposed on the estate of the decedent and the rate is determined by the size of the estate. (The

[1] State death taxes in all States amount to 1.6 percent of State tax revenue, but death taxes produce 1.0 percent of total tax revenues of states and localities. D. C. is similar to a combined State and local government. Data from "Significant Features of Fiscal Federalism 1976–1977," Advisory Commission on Intergovernmental Relations, Washington, D.C., p. 8.

Federal death tax is an estate tax but it introduces several refinements in the tax computation to take account of circumstances involving particular heirs.)

What we might call the basic D.C. tax is a tax on heirs grouped in two classes. Bequests to lineals (father, mother, ancestors, children) and to the spouse are allowed an exemption of $5.000 per heir and then taxed at rates of 1–8 percent. Bequests to other heirs (not including exempt organizations) are allowed an exemption of $1,000 per heir and are taxed at rates of 5–23 percent. Implicity the D.C. tax allows a deduction for the Federal estate tax, the estate and funeral expenses, the debts and charitable bequests.

The D.C. Tax Law also imposes a "pick-up" tax which falls on the estate without regard to the pattern of disposition between heirs (except that the pick-up tax will be lower where substantial property has been left to a spouse).

The reason for the pick-up tax is that the Federal Tax Law provides a 100 percent tax credit for State death taxes up to various specified portions of the taxable estate. The function of the pick-up tax is to specify that if the D.C. tax on the heirs is not high enough to take up the full credit against the Federal tax, then the D.C. tax is automatically increased by an amount necessary to "pick up" the full credit. This pick-up tax imposes no extra burden on estates, it simply claims dollars thta otherwise would have been paid to the Federal Treasury;. This bit of fiscal opportunism is a standard for States having an inheritance tax.

The general operation of the D.C. death tax law is shown in the series of Tables 1–5 for various estate sizes and bequest patterns between spouses, children and non-lineals. Each table shows for a Federal "economic estate," [2] the portion of assets likely to be excluded from the D.C. return, and thus the D.C. tax, the part of the D.C. tax that can be subtracted from the Federal tax and the net burden of the D.C. tax.

GROSS AND NET BURDEN OF THE DISTRICT OF COLUMBIA DEATH TAX

TABLE 1.—ESTATE TAX LEFT TO SPOUSE

[In thousands of dollars]

Size of economic estate	Excluded property	Deductible Federal tax	District of Columbia		State tax credit	Net burden of District of Columbia tax
			Tax base	Tax gross		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
$50,000	6	----------	44	0.6	----------	0.8
$100,000	12	----------	88	1.8	----------	1.8
$150,000	18	----------	132	3.8	----------	3.8
$200,000	24	----------	176	6.0	----------	6.0
$400,000	48	----------	352	14.8	----------	14.6
$600,000	60	37	503	22.4	----------	16.9
$800,000	64	69	667	32.2	----------	23.5
$1,000,000	70	101	829	41.9	----------	29.5
$2,000,000	100	284	1,616	101.5	----------	64.9
$5,000,000	150	950	3,900	284.2	----------	180.3
$10,000,000	200	2,454	7,346	559.9	----------	221.3

Notes: Col. 2—based on percentages interpolated from table 7. Col. 3—this is the deductible tax for District of Columbia purposes. It is the calculated tax on col. (1) less col. (2) reduced by the ratio of col. (2) to col. (1). Col. 4—col. (1) less cols. (2) (3). Col. (7)—col. (5) less col. (6).

[2] By economic estate we mean roughly what can be divided between government and heirs, i.e., the gross value of assets less debts, administration and burial expenses and bequests to charity.

TABLE 2.—ESTATE LEFT TO SPOUSE AND 1 CHILD

(In thousands of dollars)

Size of economic estate	Excluded property	Deductible Federal tax	District of Columbia		State tax credit	Net burden of District of Columbia tax
			Tax base	Tax gross		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
$50,000	6	----------	44	0.3	----------	0.3
$100,000	12	----------	88	1.2	----------	1.2
$150,000	18	----------	132	2.2	----------	2.2
$200,000	24	----------	176	3.7	----------	3.7
$400,000	48	----------	352	12.0	----------	12.0
$600,000	60	37	503	19.6	5.5	14.1
$800,000	64	69	667	27.8	8.7	19.1
$1,000,000	70	101	829	35.8	12.4	23.4
$2,000,000	100	284	1,616	81.4	36.6	54.8
$5,000,000	150	950	3,900	196.4	103.9	92.5
$10,000,000	200	2,454	7,346	472.0	338.6	133.4

Note: See table 1.

TABLE 3.—ESTATE LEFT TO 1 CHILD

(In thousands of dollars)

Size of economic estate	Excluded property	Deductible Federal tax	District of Columbia		State tax credit	Net burden of District of Columbia tax
			Tax base	Tax gross		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
$50,000	6	----------	44	0.6	----------	0.6
$100,000	12	----------	88	1.8	----------	1.8
$150,000	18	----------	132	3.8	----------	3.8
$200,000	24	7	169	5.6	4.8	.8
$400,000	48	66	286	11.5	8.8	2.7
$600,000	60	131	409	17.6	15.1	2.5
$800,000	64	203	533	24.2	23.5	.7
$1,000,000	70	278	652	31.3	36.6	----------
$2,000,000	100	661	1,239	71.3	103.9	----------
$5,000,000	150	2,429	2,421	165.8	398.4	----------
$10,000,000	200	5,883	3,917	285.6	1,976.6	----------

Note: See table 1.

TABLE 4.—ESTATE LEFT TO 2 CHILDREN

(In thousands of dollars)

Size of economic estate	Excluded property	Deductible Federal tax	District of Columbia		State tax credit	Net burden of District of Columbia tax
			Tax base	Tax gross		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
$50,000	6	----------	44	0.3	----------	0.3
$100,000	12	----------	88	1.2	----------	1.2
$150,000	18	----------	132	2.2	----------	2.2
$200,000	24	7	169	3.5	4.8	----------
$400,000	48	66	286	8.7	8.8	----------
$600,000	60	131	409	14.9	15.1	----------
$800,000	64	203	533	21.1	23.5	----------
$1,000,000	70	278	652	27.0	36.6	----------
$2,000,000	100	661	1,239	58.7	103.9	----------
$5,000,000	150	2,429	2,421	138.1	398.4	----------
$10,000,000	200	2,883	3,917	1,973.6	1,076.6	----------

TABLE 5.—ESTATE LEFT TO 2 NONLINEALS

(In thousands of dollars)

Size of economic estate	Excluded property	Deductible Federal tax	District of Columbia		State tax credit	Net burden of District of Columbia tax
			Tax base	Tax gross		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
$50,000	6	----------	44	2.1	----------	2.1
$100,000	12	----------	88	6.2	----------	6.2
$150,000	18	----------	132	11.9	----------	11.9
$200,000	24	7	169	17.1	4.8	12.3
$400,000	48	66	286	36.9	8.8	28.1
$600,000	60	131	409	59.0	15.1	43.9
$800,000	64	203	533	81.4	23.5	57.9
$1,000,000	70	278	652	102.8	36.6	66.2
$2,000,000	100	661	1,239	218.0	103.9	104.1
$5,000,000	150	2,429	2,421	442.2	398.4	43.8
$10,000,000	200	5,883	3,917	826.3	1,076.6	----------

Note: See table 1.

TABLE 6.—AVERAGE TAX BASE REDUCTION FROM DISTRICT OF COLUMBIA INCLUSION RULES AND DISTRICT OF COLUMBIA TREATMENT OF REAL ESTATE

(In thousands of dollars)

Size of gross estate	Insurance as percent of estate	Real estate as percent of estate	Debt and mortgages as percent of estate [1]	Jointly held property as percent of estate [2]	Exclusion percentage [3]
$100,000	8.1	32.2	3.6	29.4	12
$100,000–$300,000	8.2	28.4	5.1	25.2	12
$300,000–$500,000	5.5	22.2	5.6	14.0	12
$500,000–$1,000,000	3.8	18.4	6.2	9.0	8
$1,000,000–$2,000,000	2.2	14.6	5.6	5.3	6
$2,000,000–$5,000,000	1.3	11.0	6.9	2.7	3
$5,000,000 up	.5	10.4	7.4	1.4	2

[1] Arbitrarily we assume half of this is related to real estate.
[2] This includes jointly held real estate.
[3] For insurance we used col. 1. For real estate we initially used 20 percent of col. 2 less ½ of col. 3. Our sample of District of Columbia returns with comparable Federal returns indicated an "ommission" of 40 percent of real estate assets and we assumed that filing separately reduces tax by a half. For joint property we initially used 15 percent of col. 4 since our sample showed jointly held property understated by this percentage on District of Columbia returns. The understatement was generally exactly one-half suggesting that the understatement was probably not occurring because the jointly held property was "foreign" real estate. The final figures for the first 2 lines were reduced from 19 percent and 17 percent respectively on the hunch that the real estate was probably the residence and thus unlikely to be out of Sfate. See appendix.

Note: Sources for cols. 1 to 4 Internal Revenue Services, "Statistics of Income 1972 Estate Tax Returns," pp. 12–15.

Some patterns in these tables are striking and deserve special comment:

(1) *D.C. taxes smaller estates than the Feds*

The D.C. tax allows an exemption of $5,000 per first degree heir (spouse or lineals) and only $1,000 for each other heir. Estates as small as $15,000 are likely to involve tax. Probably about one-fourth of the D.C. death tax revenue comes from estates that have no Federal tax liability and more strikingly 90 percent of the D.C. tax return come from such estates. The minimum taxable estate under Federal law, as of 1971 will be about $175,000.

(2) *D.C. favors the estate left to many children while the Federal tax favors the estate left to a spouse*

A striking feature of the Federal law is the marital deduction which permits half the estate to be left tax free to a spouse but the D.C. law does not have a marital deduction. A young middle aged earner with a modest estate, under $400,000, has a good reason to leave the estate to the surviving widow who must raise and educate the children. An

estate of this sort is not taxed under the Federal tax, but is taxed by D.C. (up to about $20,000.)[3] The inheritance tax structure of the D.C. tax favors an estate divided among several heirs (commonly children) compared to one left to a single heir, the spouse.

(3) *On large estates left to children the D.C. tax imposes little extra burden above what must be paid to the Feds. It does impose extra burden on large estates left to spouses and non-lineals.*

The D.C. tax rates appear to be progressive but appearances are deceiving, because of the "State tax credit" under the Federal tax. When D.C. imposes a "tax" of $100,000 on some very large estate and the State tax credit allowed for that estate under the Federal law is $90,000, the extra burden imposed by D.C. on that estate is only $10,000. The other $90,000 is taken from the Federal Treasury. As can be seen in Tables 1–6, the State tax credit is a rising percentage of the estate as estates get bigger.

The remarkable result of this can be seen by comparing Table 1, properly left to a spouse, and Table 4, property left to 2 children. The "estate splitting" involved in the inheritance tax form implies a lower tax for an estate divided between two children. More importantly the State tax credit is larger for an estate left to children. (The State tax credit is a percentage of taxable estate and this is reduced by the marital deduction.) The result is striking. The D.C. tax imposes extra burdens on estates left to spouses at all levels (about 3–4 percent of the economic estate). The extra burden of the D.C. tax on an estate left to 2 children peaks at about 2 percent and disappears once the estate exceeds $200,000!

For large estates, the D.C. tax is mostly a burden on estates left to spouses or non-lineals!

(4) *D.C. Law excludes from tax most insurance proceeds and some jointly held property and effectively reduces tax on some real estate*

In several ways the D.C. death tax is low relative to the Federal tax because of a smaller tax base. In the first place, about 5 percent of Federal estate assets are life insurance proceeds. Under D.C. law these are not taxable when paid to a named beneficiary other than the estate of the insured. There is no reason whatever for continuing this exclusion.[4]

Death taxes in all the States and D.C. fall somewhat lightly on real estate because of a peculiar situs rule. The D.C. death tax applies to all non-real estate assets of decedents who were D.C. residents at the time of death plus D.C. real estate of decedents non-resident of D.C. This system reduces tax on real estate because it allows much real estate to be taxed in small parcels at low rates with extra exemptions. (Assume 2 estates, of $500,000, each left to two children, one from a D.C. resident and another in State A with a death tax similar to that in D.C. Further assume that each estate includes $100,000 of real estate in the other jurisdiction. Each jurisdiction will tax $500,000 of transfers but the "foreign owned" real estate being on separate returns will give rise

[3] In practice the D.C. exemption of insurance proceeds, other than those payable to the estate, probably works most often to reduce tax on the widow's inheritance. We deal with this more later.

[4] There is an argument that this exclusion could be removed simply by changing the regulations to correct a prior "mistake."

to tax of $1,400. If the two estates had involved "domestic" instead of "foreign" real estate the tax on each would have been $5,000. Correcting this arrangement would require joint action by the several states.

Finally, the D.C. law includes less jointly owned property than does the Federal law. The Federal law requires that jointly held property be included in the estate to the extent that the decedent contributed to cost of the joint property. The D.C. rule is based on assuming that the property is owned proportionately by the joint owners without regard to contributions. (Thus, if one of three joint owners died, the D.C. law would treat the two survivors as inheriting a sixth interest because their share rises from one-third to one-half.) The D.C. rule could require more or less inclusion than the Federal rule, depending on whether the decedent had contributed more or less than a proportionate share. Our investigation of a sample of returns for 1975 decedents where the comparable Federal estate tax return is available suggests that generally the D.C. law results in lower inclusion. (See notes to Table 6).

AN AGGREGATE PICTURE OF D.C. DEATH TAXES

The total effect of these features of the D.C. death tax are shown in another way in Table 7 which is based on a sample of returns for 1975 decedents. (See Appendix A for details of the sampling). In this table we have identified the D.C. tax between classes of heirs, size of estate and gross and net tax burden. (By net tax, we mean the extent to which the D.C. tax exceeds the credit for State taxes on the Federal return.)

The data from Table 7 is presented in abbreviated form in Tables 8 and 9. Table 8 highlights the point that most of the revenue comes from the third of bequests that go to persons outside of the immediate family. Within the family most of the tax comes from transfers to spouses. When we look at net burden, the effective rate on spousal bequests is about 3 times that on bequests to children, and the rate on outsiders is about 3 times the spousal rate (Table 9).

D.C. death tax collections have varied considerably from year to year, as we would expect from a tax that raises most of its revenue from a relatively few large returns. This is to say that Tables 7 and 9 can be taken only as rough measures of the kind of patterns to be expected in a future year.

TABLE 7.—DISTRIBUTION OF THE GROSS AND NET DISTRICT OF COLUMBIA DEATH TAX BY ESTATE SIZE AND CLASS OF HEIR, 1975 DEATHS

[Assets and bequests in millions of dollars, taxes in thousands of dollars]

Net estate size	Number of estates	Total assets	District of Columbia tax		District of Columbia tax rate		Bequests to spouse			Bequests to children		
			Gross	Net	Gross (percent)	Net (percent)	Amount	Tax gross/net	Rate gross/net (percent)	Amount	Tax gross/net	Rate gross/net (percent)
Below $50,000	1,344	23.8	469		2.0		8.6	80	0.9	6.6	40	0.6
$50,000–$100,000	424	29.4	858		2.9		10.6	184	1.7	8.9	128	1.3
$100,000–$200,000	240	31.1	1,756	1,640	5.6	5.2	3.9	58	1.5	9.2	228/136	2.3/1.5
$200,000–$300,000	50	11.7	555	427	4.7	3.6	3.4	124/109	3.6/3.2	4.2	91/39	2.2/.9
$300,000–$500,000	28	10.9	664	436	6.1	4.0	3.0	117/104	3.9/3.5	3.3	85/19	2.6/.6
$500,000 up	56	51.6	3,728	1,526	7.2	3.0	22.2	1,202/974	5.4/4.4	10.2	354/30	3.5/.3
Inheritance	(48)	(33.0)	(2,014)	(1,526)	(8.7)	4.6	(20.0)	(1,016/974)	5.1/4.9	(6.6)	(240/30)	3.6/.5
Pickup	(8)	(18.6)	[1](1,712)	0	4.6	0	(2.2)	(186/0)	8.4/0	(3.6)	(114/0)	3.2/.0
Total	2,134	159.6	8,030	5,119	4.6	3.4	51.4	1,765/1,509	2.9/2.5	74.4	926/285	1.5/.7

Net estate size	Bequests to grandchildren			Bequests to ancestors			Bequests to brothers/sisters			Bequests to others		
	Amount	Tax	Rate (percent)	Amount	Tax	Rate (percent)	Amount	Tax gross/net	Rate gross/net (percent)	Amount	Tax gross/net	Rate gross/net (percent)
Below $50,000	0.5	4.8	1.0	0.1			3.7	176	4.8	4.3	168	3.7
$50,000–$100,000	.2	.8	.2	.5	1.2	0.2	5.0	328	6.5	4.2	216	5.2
$100,000–$200,000	.2	.8	.2	.2	1.6	.8	7.6	568/544	7.5/7.2	10.0	900	9.0
$200,000–$300,000	.2	3/1	1.5/.5				1.1	60/47	5.4/4.3	1.8	277/230	15.3/12.8
$300,000–$500,000	.6	21/0	3.5/.0				1.8	295/229	16.4/12.7	2.3	126/83	5.5/3.6
$500,000 up	(12.8)	558/16	4.4/.1				.4	2/0.4	5.0/1.0	6.0	760/516	11.4/8.6
Inheritance	(.6)	(14/4)	2.1/.5				(.4)	(2/0.4)	5.0/1.0	(5.4)	(742/516)	13.7/9.6
Pickup	(12.2)	(544/0)	4.5/0							(.6)	(18/0)	3.0/0
Total	14.5	589/26	3.8/.2	.8	2.8	.4	19.6	1,428/1,324	7.4/6.9	28.9	2,447/2,113	8.0/7.2

[1] Includes $848,000 of pickup tax not assignable to particular bequests.

Source: See app. A.

TABLE 8.—WHERE THE DISTRICT OF COLUMBIA DEATH TAX MONEY COMES FROM (GROSS REVENUES)

[In thousands of dollars]

Net estate size	Spouses	Children	Grand-children	Ancestors	Brothers/ sisters	Others	Total
Below $50,000	80	40	5	----------	176	168	469
$50,000 to $100,000	184	128	1	1	328	216	858
$100,000 to $100,000	58	228	1	2	568	900	1,756
$200,000 to $300,000	124	91	3	----------	60	277	555
$300,000 to $500,000	117	85	21	----------	295	126	644
$500,000 up							445
Inheritance	1,016	204	14	----------	2	742	2,014
Pickup	186	104	544	----------	2	18	864
Pickup n.e.c.							424
Total	1,765	719	589	3	1,429	2,447	8,029

Source: Table 7.

Note: Detail may not add to total due to rounding.

TABLE 9.—WHERE THE NET DISTRICT OF COLUMBIA DEATH TAX BURDEN LIES

[In thousands of dollars]

Net estate size	Spouses	Children	Grand-children	Ancestors	Brothers/ sisters	Others
Below $50,000	0.9	0.7	1.0	----------	4.8	3.7
$50,000-$100,000	1.7	1.3	.2	0.2	6.5	5.2
$100,000-$200,000	1.5	1.5	.2	.8	7.2	9.0
$200,000-$300,000	3.2	.9	.5	--------	4.3	12.3
$300,000-$500,000	3.5	.6	.0	----------	12.7	3.6
$500,000 up						
Inheritance	4.9	.5	.5	----------	.2	9.6
Pickup	0	0	0	----------	.0	0
Total	2.5	.7	.2	.4	6.9	7.2

Source: Table 7.

SOME FEATURES OF HIGH DEATH TAX STATE LAWS

It will be useful to add some analysis of the comparative burden of death taxes in D.C. and in the States. We noted, in the opening paragraph of this report, that the share of death taxes to total tax revenue in the District of Columbia was about normal for the U.S. (provided we think about D.C. as a city-state.) There are several states for which the revenue contribution of death taxes is higher than it is in D.C. Table 10 notes some dimensions of death taxes in several of the States that obtain more from this tax than does D.C. The main reason for the higher yield in other states with higher yield is higher rates, both higher starting rates and top rates coming into effect for smaller transfers. (The relative yield of death taxes in a small state in one year can be much affected by the death of a few rich people.)

TABLE 10.—FEATURES OF STATE DEATH TAXES WITH HIGHER YIELD THAN DISTRICT OF COLUMBIA DEATH TAX

State [2]	Death tax as percent of all State and local taxes	Rates: Spouse and lineals	Rates: Nonrelatives	Level for top rate
District of Columbia	[2] 1.0	1–8	5–23	$1,000,000
California	1.3	3–14	10–24	400,000
Colorado	1.5	2–8	10–19	500,000
Connecticut	2.5	3–8	8–14	1,000,000
Iowa	1.4	1–8	10–15	150,000
Montana	1.3	2–8	10–15	100,000
New Jersey	1.7	1–16	15–16	3,200,000
Pennsylvania	1.7	6	15	1
Rhode Island	1.7	2–9	8–15	1,000,000
Tennessee	1.6	1.4–9.5	6.8–20	500,000
Washington	1.4	1–10	10–25	500,000
Wisconsin	1.5	1.25–6.25	5–25	500,000

[1] 3 States which high-yield death taxes impose tax only on the estate. Oregon at rates of 2 to 10 percent, Oklahoma at rates of 1 to 15 percent and Massachusetts at rates of 5 to 16 percent.
[2] District of Columbia ratio is for fiscal year 1978, others for 1975.

Source: "Significant Features of Fiscal Federalism," 1977, Advisory Commission on Intergovernmental Relations.

II. Recent Changes in the Federal Estate Tax

In the Tax Reform Act of 1976 (Public Law 94–455) the Congress enacted quite substantial changes in the Federal Estate Tax. Overall these changes are in the direction of considerable reduction in death tax revenues. In the next four years this reduction will average $1 billion a year. A more striking feature of these changes is that the Feds reduced taxes on those cases that D.C. taxes heavily, relatively small estates, and spousal transfers, while increasing taxes on most cases that D.C. taxes lightly, large bequests to children.

One can only infer that either the D.C. authorities or the Federal authorities have some incorrect ideas about fair taxes. We will, in section 2.1 detail some of the major changes in the Federal death tax in 1976 and in sections 2.2 and 2.3 we will develop our views on the differences in direction between the Federal and D.C. authorities.

2.1 *Federal Changes*

Relief for small estates.—The "populist" thrust of the 1976 Federal estate tax changes was to make the tax more progressive. The exemption level was increased and the exemption technique was converted to a tax credit so that it would become much more valuable for small estates.

The 1976 changes did reduce the top tax rate from 77 percent to 70 percent but this relief at the top is largely offset by the cumulative effects of upward rate adjustments in the middle brackets plus the effects of a number of modest loophole closing provisions which will have major impact in the top brackets. All of this is significant when it is remembered that the Federal tax is already more progressive than the D.C. tax.

In Table 11 we show that contrast in the relatively large rate reductions in the 1976 Federal tax revision for gross estates under $600,000 (which translates roughly to a Net D.C. estate under $300,000) and the negligible decreases and increases above this level. The Table does show the effect of the more generous marital deduction for estates under $500,000 but it does not reflect the other loophole closing measures.

TABLE 11.—CHANGES IN FEDERAL TAX RATES AND MARITAL DEDUCTION, 1976, SELECTED CASES

[In thousands of dollars]

Net estate before marital deduction	Before State tax credit					
	Maximum marital deduction			No marital deduction		
	Pre-1976	Post-1980	Change	Pre-1976	Post-1980	Change
$100,000	0	0	----------	5	0	−5
$150,000	1	0	−1	18	0	−18
$200,000	5	0	−5	33	8	−25
$400,000	33	0	−33	94	75	−19
$600,000	63	39	−34	160	146	−14
$800,000	95	75	−20	230	221	−9
$1,000,000	127	109	−18	304	299	−14
$2,000,000	304	299	−5	726	734	+8
$5,000,000	969	979	+10	2,430	2,504	+74
$10,000,000	2,430	2,504	+74	6,042	6,004	−38

In addition to the increased marital deduction and rate changes the tax reductions in Table 11 were accomplished by converting the old $60,000 exemption into a tax credit. This has the effect of increasing the "taxable estate" by $60,000 at the same time it reduces the tax. The The technical term "taxable estate" is involved in the definition of the maximum state tax credit and implicitly reduces the net burden of the D.C. Tax, provided there is a Federal Tax. At the same time the lower Federal tax produces a slightly higher D.C. tax (because of the lower deduction).

Increased Marital Deduction.—The Federal tax has since 1948 allowed a deduction up to half of the estate for property left to a spouse. In 1976 this was changed by making the ceiling on the deduction the greater of $250,000 or half of the estate. Coupled with the new credit that will be in effect in 1981, this provides no Federal tax on an estate of $426,000 left half to the spouse. The D.C. tax on this estate is at least $18,000.

Gift Tax Changes.—The 1976 law made substantial strides toward integrating the gift tax with the estate tax. The major significance of this for D.C. is that, in the future, less property will be transferred by gift and more by estate. Since D.C. does not have a gift tax, lower lifetime transfers should increase D.C. death tax collections gradually, making them about 2–3 percent above the present trend by the year 2000. This development and the inference that in future reforms the Federal government will move closer to full integration means that there is no reason for D.C. to go into the complex gift tax area.

Orphan's deduction.—The new Federal law allows a special deduction for bequests to orphan children of $5,000 for each year that the orphan's age is below 21. The D.C. law does not distinguish, as many State inheritance tax laws do, between minor and older children. The distinction of orphan children is a new concept in the Federal law.

Carry-over basis.—The new Federal law provides that inherited property must carry the same basis that it had in the hands of the decedent. Previously the basis was stepped-up to the estate tax value of the property. This will have significance for income tax and D.C. should be sure to amend its income tax law to require the same basis as the Feds.

Generation skipping.—Considerable tax can be saved by leaving property in trust with income to go to children of the deceased, and possibly grandchildren, with the property finally going over to the remaindermen who could be grandchildren or even great great grandchildren. Legally this arrangement has not, heretofore, involved any transfer of property at the death of the holder of the income interest because at that time the successor interest is merely coming into possession of a contingent interest that was owned all along. The new Federal statute will look through this charade in some but not all cases by deeming a transfer to have occurred when a life beneficiary dies and a remainder-person comes into possession of the property (or of the income interest). The Federal provision has numerous exceptions but again one may judge that this is a first step toward what will become an effective reform. The D.C. law should be modified to create a taxable transfer in the same circumstances in which the Federal law creates a transfer.

2.2 *The Treatment of Spousal Transfers*

It should be clear from Tables 1–5 that there is little tax on a D.C. estate left to the children of the decedent but a heavy tax when property is left to the spouse or to a non-lineal (or non relative). Even when the whole property is left to one child the net extra D.C. tax (beyond what can be subtracted from the Federal tax) reaches a maximum of about $4,000 at 150,000 and then falls, reaching zero at about $900,000. With two children the maximum is about $2,000 at $150,000 and the burden then falls reaching zero at about $200,000. If only half of the property is transferred to a spouse, however, there is always extra tax above the Federal Credit. The net D.C. tax burden reaches 3% at about $400,000 and then drops slowly for larger estates.

The Federal preference for spousal transfers is eminently sensible. In the normal case of a taxable estate it will be the breadwinner spouse who dies first and the surviving spouse will be faced with the termination of a salary income (or a decline in a pension). Very likely the total financial position of the survivor will have declined dramatically on the death of the breadwinner spouse. Despite the formal transfer of property to the survivor at this time, the circumstances are not appropriate for collection of tax.

It is this concern about a substantial decline in living standards for the survivor that explains the Federal provision of a marital deduction which amounts to $250,000 for estates up to $500,000 and 50 percent of the estate for larger estates. There have been proposals from students of estate tax policy, who otherwise favor closing loopholes, to increase the marital deduction to 100 percent.[5]

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[5] See "Federal Estate and Gift Tax Revision," American Law Institute. 1969. Also U.S. Treasury Department "Tax Reform Studies and Proposals," published by Committee on Ways and Means and Committee on Finance, U.S. Congress. 1969 and Jerome Kurtz and Stanley Surrey "Reform of Death and Gift Taxes," Columbia Law Review 70: 1365 (Dec. 1970).

Apart from the consideration that a surviving widow may be in financial straits despite her "inheritance" it is quite likely that the surviving spouse contributed significantly to the accumulation of the family wealth. Several states following the traditions of the Spanish law deem the joint property of the spouse belong half to each so that inheritance of half the wealth of a spouse involves mere recovery of one's own. If this were the case, a given number of dollars inherited by a spouse ought to be taxed much less heavily than the same number of dollars inherited by a child. The D.C. tax puts these two heirs in the same class for small estates and it effectively taxes the spousal transfer more heavily for large estates (because the State tax credit is lower.

A third consideration arguing for more generous treatment of bequests to surviving spouses arises from the consideration that a large piece of the estate tax base arises from wealth holders who accumulated assets (during middle age) to finance retirement. If things had proceeded normally, most of these assets would have been dissipated by the normal year of death but they involve a large estate if the accumulator dies before retirement. Leaving some of this estate to the spouse tax free merely lets it be spent in supporting the spouse's retirement years as had been intended all along. The important time to tax is when property is being passed to a new generation.[6]

2.3 The Treatment of Small Estates

While we agree with the theory of the 1976 Federal estate tax changes as they apply to spousal transfers, we think that the Federal government was moving in the wrong direction with its effort to reduce taxes drastically on small and medium sized estates that did not involve spousal transfers.[7]

What we are talking about here is property left to grown children (Under the Federal tax if minor children have a surviving parent, the tax free transfer to a spouse can provide for them.) If there is no surviving parent, the Federal tax law provides a special orphan's exemption. The Federal law prior to 1978 taxed an estate left to children when it exceeded $60,000 and after 1981 the tax won't start until the estate exceeds $175,000.

If the children of the deceased are grown they are likely to be earning their own incomes. A normal age for children of the deceased is 40 to 50! At this stage in life an inheritance is very largely a windfall income. A 40 year old "child" with a modest income of $25,000 would be paying a marginal tax rate of nearly 30 percent on $10,000 of additional income earned by working overtime or by moonlighting. For a $150,000 inheritance there would be only a 3 percent D.C. tax and if this were an only child there could be no Federal Estate tax. In fact, the effect of the 1977 tax change was to reduce the tax on this case from $18,000 to zero!

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[6] For a discussion of the theory of death taxation, see Carl Shoup, "Federal Estate and Gift Taxes," Washington, D.C., Brookings 1966, and G. Brannon "Estate Tax Reform—a Survey of the Issues" in Committee on Ways and Means "General Tax Reform," 1973, p. 10 p. 1565.

[7] For a further argument for taxing relatively small estates see G. Brannon "Death Taxes in a Structure of Progressive Taxes," National Tax Journal 26: 451 (Sept. 1973).

What seems to have occurred in 1977 was that the Congress got confused by the description of "small" estates, which is a bit like the expression "a small elephant". An estate of $100,000 is small compared to estates of $10,000,000 but the fact is that less than one person in 20 shuffles off this mortal coil leaving so large an estate as $100,000.[8]

We think that the appropriate way for legislators to look at the matter of death taxes is to remember that if death taxes are lowered then we must raise (or forego a reduction in) taxes on living persons, income taxes, sales taxes, or property taxes. It seems self evident that any disincentive effects of a tax are going to be greater if it impacts on the decisions of living individuals than it would be if it reduces the "windfall" transfer between grown people. It seems reasonable, therefore, to allow at all wealth levels some postponement of lifetime taxes in favor of collecting the tax after death out of the testamentary transfer.

In the common debates about the unequal distribution of wealth, there is relatively little complaint about the wealth accumulation from saving one's own lifetime earnings but there is much complaint about the circumstance that people have unequal starting places in the race for income. The appropriate response is to tax death transfers more heavily, and lifetime earnings less heavily.

In this light we think that the approach of the D.C. death tax law is fundamentally correct in imposing higher taxes than does the Federal law on small estates left to children up to $175,000. We think that even the 1977 Federal tax relief for these cases was inappropriate (while we applaud the 1977 Federal tax relief for estates left to spouses, and orphaned children.)

This observation which endorses the heavier D.C. death tax on small estates left to children carries an implicit criticism of the other striking pattern of the net D.C. tax shown in Tables 3 and 4, that there is very little net D.C. tax on large estates left to children. An estate divided among two or more children is almost effectively free of any net D.C. tax. (For two children the net D.C. tax after the Federal credit, rises only to a peak of 1.5 percent (at an estate of $150,000) and disappears for an estate of about $200,000.) D.C. is getting money out of these estates but almost all of the money is coming out of dollars that would have otherwise gone to the Federal treasury. The D.C. tax is not burdening these estates in the way that it burdens the estates left to spouses or non-children.

III. Recommended D.C. Estate Tax

We turn now to specific recommendations for modifying the D.C. death tax. Our basic proposal which we develop in this section is intended to achieve three goals:

To provide for a simpler, more administrable tax by modeling tax on the Federal estate tax.

To provide greater equity between classes of heirs by modeling tax on the Federal Estate tax.

To increase the revenue from death taxes by increasing taxes on estates of more than $200,000 left to children.

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[8] About 2 million Americans die per year (Statistical Abstract) but only 110,000 leave gross estates over $100,000 (Statistics of Income 1972: "Estate Tax Returns").

3.1 Detailed Rationale

Very clearly the thrust of our criticism of the D.C. death tax is that it is in the form of an inheritance tax. We think that this is simultaneously the source of a great deal of complication in practice, the source of unjustifiable differences in tax burdens between similar sized estates and the source of low aggregate revenues.

Much of the reasoning behind these criticisms is implicit in the foregoing discussion. We recapitulate the reasons here, referring back to the earlier argument as much as possible to limit repetition.

Simplicity. In one set of not uncommon testamentary dispositions, discretionary trusts, an inheritance tax is fundamentally non-administrable because it cannot be determined which heir will eventually inherit. It is not unreasonable for a testator to leave property in trust with the ultimate disposition to be determined by subsequent events either automatically or in the discretion of a trustee. In these situations the D.C. tax authorities must accept some guesses about ultimate disposition in order to compute a tax. So far as we know, the guesses may in practice turn out to be very wise but they are still guesses and the apparent elegance which is being sought in the inheritance tax (taxation by the size of inheritance) is largely illusory.

Another problem of simplicity is that an inheritance tax depends on the determination of another set of facts about the estate and will, namely the identity of particular heirs. The Federal tax can be settled when the value of the estate and the dispositions to the spouse and to orphaned children is known. The D.C. tax requires finding which child got the automobile, the family home, the family jewels, etc. Frequently the aggregate value of some classes of assets will be settled for purposes of the Federal tax while the values of individual items going to different heirs must be determined for purposes of the D.C. tax.

All of this complication within the D.C. tax will be seen in the light of the following argument to be relatively useless. We will argue that the only dispositions to particular heirs that are relevant to determining a fair tax are spousal bequests and bequests to orphaned children. These could be obtained from the Federal tax return if the D.C. tax were modeled on that basis.

Equity. It should be a sufficient condemnation of the fairness of the D.C. tax that in terms of burdens on intra family transfer, it is mostly on the spouse. This follows from our prior argumentation in favor of the marital deduction in the Federal estate tax. We think that in the ordinary case the surviving spouse, normally the widow, will have experienced a considerable reduction in living standards because of the death of the husband. In general, grown children do not suffer any loss in current income when a parent dies. For them the inheritance is a financial gain. We also argue that it is reasonable to argue that a surviving spouse contributed to the partner's lifetime accumulation in ways that children do not ordinarily contribute. Finally we argued that much of the inheritance of a surviving spouse is money that ordinarily would be used in retirement without further tax, if the breadwinner spouse had survived.

The thrust of this argument is not entirely in the direction that the D.C. tax on property left to surviving spouses should be lightened. We think that there should be an exemption from tax for property left to

a surviving spouse very substantially higher than the present tax, (say $100,000 or $50,000 plus $25,000 for each surviving minor child.) The argument for this level is that an inheritance of $100,000 at age 55 could purchase a life annuity of about $8,000 which is a minimum income.[9]

The next specific of our equity argument is that the D.C. tax on property left to children should be higher than it is. Under the present law which favors bequests to children in several ways: (1) the D.C. inheritance tax puts children in a more favorable rate bracket than non-lineals; (2) the inheritance tax technique means that a given amount of property divided between two or more children will be taxed less heavily than the same amount of property left to one spouse; and (3) since the Federal tax is higher for property not left to spouses, i.e., where there is no marital deduction, this means that the Federal credit for State Death taxes will be much higher for estates left to children. (This last point is significant only for large estates. See Table 9 where bequests to children in estates over $200,000 carry net taxes of less than 1%).

We think that this light taxation of bequests to children is not equitable because the inheritance of a grown child represents the transfer of wealth to a new generation where it is very much like unearned income. As we argued earlier, the inheritance of a child would normally be received at an age of 40 or 50 when the "child" is self-supporting. The generous marital deduction would serve to provide a means of transferring property for the care of minor children and this could be extended by adding an additional deduction for bequests to orphan children like that recently adopted in the Federal law.

Indeed, we see little justification for the enormously heavier burden that the D.C. tax puts on bequests to non-lineals. In the ordinary case a decedent would have given substantial benefits to the children during lifetime and would have the normal reasons of family solidarity for favoring children over non-lineals in testamentary dispositions. One could be, as we are, in favor of the family relationship and still argue that the government of the District of Columbia should not be in the business of providing encouragement to family dispositions. This should be the parents' business and the tax law could reasonably tell the parents that the tax will be the same whether property is left to children or to non-lineals.

In the literature on the inheritance tax it used to be said that an inheritance from a parent was expected while one from a distant relative was unexpected. The unexpected inheritance is more of a windfall and could be taxed with *less* perceived burden.[10] The distinction

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[9] One could make a case for adopting the same marital deduction in a D.C. estate tax as applies in the Federal law. We do not do so for several reasons. The Federal deduction is, as applied to large estates something of a tax postponement since normally a surviving spouse would leave the property in another taxable estate, to the same children who would have inherited originally. From the D.C. standpoint this later transfer could occur in another State. Secondly the large estate left 50% to a spouse is already lightly taxed under Federal law and one can argue that there is extra tax paying capacity here. Finally, the proposed $100,000 exemption is already a very generous change from present D.C. law and we think change in this direction should be made slowly.

[10] Shoup op. cit. pp. 100–109 mentions this criterion for judging particular features at death taxes.

seems trivial to us. It may have made sense in a society where sons of the rich expected to live on property income without working, an expectation that could be thwarted by tax.[11] We doubt that there are such expectations in the U.S. but if they exist we see no reason to pander to them.

In our sample of D.C. inheritance tax returns for 1975 we found that about 40 percent of the non-lineal bequests went to brothers and sisters. Normally these relatives would be about the same age as the deceased, and a generation older than the deceased's children. Bequests to the deceaseds' brothers and sisters should show up again in the death tax base before bequests to the deceased's children are taxed again. This would argue for taxing bequests to brothers and sisters more lightly than bequests to children, if one had to have different rates.

Another part of non-lineal bequests went to stepchildren. If a testator chooses to treat step children on a par with blood children, this would seem to be particularly charitable and it is hard to see why government should penalize the step child's inheritance.

It is significant that one large class of dispositions to lineals, those to grandchildren and to great grandchildren produce substantial tax benefits in the long run and if anything deserve higher taxes at the time they are made. In the normal devolution (passing down) of family wealth it would be expected that some death tax would be payable at each generation. A wealthy testator is able to leave to the children enough to take care of them for their lifetimes and leave the rest to the grandchildren. This arrangement minimizes the tax that would be payable at the death of the next generation (the children). We referred earlier to a special case of this generation skipping, involving trusts which was subjected to extra tax under the 1976 Federal tax changes. The point we are making here is that the D.C. tax is divided between children and grandchildren. This relief is inappropriate. A penalty tax is better.[12]

In summary as a matter of equity, we see little value in the inheritance feature of the D.C. tax. The only inheritance that we would like to treat distinctly is a modest bequest to a surviving spouse and that can be handled under an estate type tax.

Tax base. There seems to be no reason to continue to exclude from the D.C. tax base, life insurance proceeds not payable to the estate. The tax now covers property not passing through the probated estate. Insurance proceeds should be included to the extent included in the Federal law.

The treatment of joint property is more difficult. The present D.C. law is arbitrary but the present Federal law which involves a reconstruction of who contributed the property is "difficult confusing and uncertain".[13] The American Institute group working on estate tax matters recommended generally that the fractional interest in the joint property changing hands should be taxed.[14] This is the D.C. rule. On large returns D.C. would have the advantage of being able to use

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[11] Older readers will recognize P. G. Wodehouse's character Bertie Wooster and his fellow "Drones".

[12] Such a penalty tax on direct bequests to grand children was proposed in the 1968 Treasury program (see fn. 5).

[13] "Federal Estate and Gift Taxation," American Law Institute, 1969 p. 13.

[14] Ibid. pp. 14–15.

the Federal return if the D.C. rule corresponded to the Federal rule. We are not impressed that this is much advantage. Most D.C. returns do not have Federal returns attached and many of the joint property transfers on Federal returns will involve overlaps with the marital deduction (property jointly held with a spouse) so no great effort goes into perfecting the application of the Federal joint property rule.

Finally we take note of occasional proposals for a homestead exemption. We prefer to handle the purpose of these proposals by our marital deduction.

Revenue. It is implicit in our preceding argument that we would like to make D.C. death taxes higher in some case (bequests to children) and lower in others (modest bequests to spouses and concentrated bequests to non-lineals.) On balance, we think that a net increase in death tax revenues should be planned and a target of a 50 percent revenue increase is not out of the question in the shift to estate taxation. We think this is reasonable because the Federal government in 1976 so to speak "retreated" in the death tax field. Since we regard the Federal action in this respect as unwise tax policy, it follows that we regard the Federal change as opening up good tax territory.

Since there is a wide range of rate possibilities in an estate tax, we offer one specific rate proposal, which along with our proposed marital deduction of up to $100,000, the $10,000 exemption, and the inclusion of insurance would increase revenues about 45 percent. We also provide along with this a distribution at the rate changes by estate size and a table which permits the calculation of revenue yields, and size distribution of the burden. (These estimates are based on our sample and are only rough indications).

The suggested rate schedule is as follows:

For net estates of size:	The tax is:
Up to $10,000	Zero.
$10,000 to $20,000	6 percent of excess over $10,000.
$20,000 to $50,000	$600 plus 8 percent of excess over $20,000.
$50,000 to $100,000	$3,000 plus 9 percent of excess over $50,000.
$100,000 to $300,000	$7,500 plus 10 percent of excess over $100,000.
$300,000 to $500,000	$21,500 plus 11 percent of excess over $300,000.
$500,000 up	$49,500 plus 12 percent of excess over $500,000.

The revenue effect of this change, based on our sample of 1975 returns is shown in Table 12. (Table 13 is structured to permit the reader to adjust the burden distribution in Table 12 for other rates.) We think that Table 12 is descriptive of the general pattern of the rate changes. As we indicate in the Appendix, we think that our sample understates the total tax base. A projection of D.C. death tax collections prepared by the D.C. Dept. of Revenue April 6, 1977 puts normal death tax collections over the next few years at $8 million. On this base our indicated revenue gain would be $4 million.

TABLE 12.—REVENUE FROM EXISTING DISTRICT OF COLUMBIA DEATH TAX AND RECOMMENDED REVISION, BASED ON SAMPLE OF 1975 RETURNS

[Dollars in thousands]

Net estate size	Number of estates (1)	Assets (million) (2)	Present tax (gross) (3)	Tentative tax (rate, M.D.) and exemp. (4)	Adjust for life insurance	Final new tax	Net change
$0–$10,000	456	$1.6	$17	$0	$0	$0	$−17
$10,000–$20,000	376	5.4	74	58	6	64	−10
$20,000–$50,000	512	17.0	383	478	48	526	+143
$50,000–$100,000	424	29.4	858	1,307	130	1,437	+579
$100,000–$200,000	240	31.1	1,756	2,223	222	2,445	+689
$200,000–$300,000	50	11.7	555	859	86	945	+400
$300,000–$500,000	28	10.9	664	927	46	973	+309
$500,000 up	56	51.6	3,728	5,106	100	5,206	+1,476
Total			8,034			11,796	3,762

TABLE 13.—FACTORS FOR ADJUSTING REVENUE ESTIMATES FOR ALTERNATIVE RATES (PRIOR TO LIFE INSURANCE INCLUSION) EFFECT ON THE TAX BORNE IN EACH SIZE

[In thousands of dollars]

Net estate size	Class from reducing by 1 point—					
	the 6 percent rate	the 8 percent rate	the 9 percent rate	the 10 percent rate	the 11 percent rate	the 12 percent rate
$10,000–$20,000	9.6					
$20,000–$50,000	31.2	36.4				
$50,000–$100,000	26.4	79.2	55.6			
$100,000–$200,000	20.8	62.4	104.0	62.7		
$200,000–$300,000	5.0	15.1	25.2	48.1		
$300,000–$500,000	2.8	8.3	13.9	55.7	14.7	
$500,000 up	5.6	16.6	27.8	110.4	101.4	195.8

Note: In principle col. 4 of table 12 can be constructed from this table. The $10,000–$20,000 size class pays 6 points in the 1st bracket (6×9.6) is 58; the $20,000–$50,000 class pays 6 points in the 1st bracket and 8 points in the 2d bracket (6×31.2+8×36.4) is 479 etc. These totals will differ slightly due to rounding.

In equity terms we think that the rate changes in Table 12 are fair. There is relief for estates left to spouses up to about $300,000. On balance there are increase for estates left to children (and from $60,000 up these estates received large tax relief from the Federal changes in 1976). The tax is made more progressive and we argued in section 1 that the D.C. tax after the Federal credit is not very progressive.

The problem, of course, that will get much attention is the possibility that higher taxes on very wealthy estates would cause wealthy people to change their domicile to a low tax state. This is often not very difficult for the very wealthy taxpayers because they are likely to have several residences and could without much effort, designate one or the other as the domicile.

We know of no evidence for the intensity of this location change decision. It does seem clear that the States have been frightened about a location effect which accounts for the fairly typical result that the States impose relatively light burdens (after taking account of the Federal credit) on wealthy estates. The low progressivity of the D.C. tax is not uncommon among state death taxes.

On the other hand the death tax is only one of many circumstances affecting one's choice of residence. A jurisdiction does not necessarily lose revenue because some wealthy resident chooses an out-of-state

residence. The issue is partly how much location change occurs compared to the tax increases. The issue is also in part a question of how the jurisdiction chooses to tax wealthy people. One would expect location decisions to be much affected by a combination of unfavorable legislation.

There are some indications that up to net estates of $500,000 tax minimization strategy is no dominant. Testators left as much as ⅓ to ½ of estates to "Class B" recipients which involves much higher tax rates than bequest to spouses or lineals. Tax minimization is more conspicuous in the category of net estates over $500,000. (There only 12 percent of bequests were left to "Class B" recipients and there were significant bequests to grand-children).

There is already a conspicuous difference in the low effective tax rates on large bequests to lineals and spouses in Maryland (1 percent) and the corresponding rates of up to 6 percent in D.C. This has not caused a conspicuous decline in the D.C. death tax collections.

D.C. death tax collections rose sharply in the early 1960's and then flattened out at around $6 million between 1965 and 1974, then jumped up sharply to the $10 million range in 1975 and 1976. A significant rate increase was enacted at the end of 1971. The overall pattern is at least suggestive that general social conditions had as much to do with the decision of well off individuals to maintain D.C. residence as estate tax considerations. It is well known in Federal estate tax experience that testators make relatively small use of the opportunity to reduce transfer taxes by means of lifetime gifts.

None of this argumentation on the location effects is very definite. If it is thought that the problem is nevertheless worrisome an appropriate strategy would be to convert to an estate tax with a starting rate of 6% and 8% along with the marital deduction and the $10,000 exemption. This would reduce the revenue increase in the brackets above $200,000 net estates by approximately half that shown in table 12. If no strong location effects are observed from this further steps toward a progressive death tax could be tried.

IV. An Alternative Inheritance Tax

We see little reason for retaining the complex inheritance tax form. If circumstances dictate such a retention, we would favor retaining the most favored rate for transfers to spouses and to ancestors. Bequests to children should be lumped with bequests to non-lineals at some average of the present rates and insurance proceeds should be added to the tax base. If the new rates applicable to children and non-lineals is closer to the present non-lineal rate, there would be a net increase in revenue of sufficient size to introduce a modest marital deduction and still produce a net revenue gain.

APPENDIX A. THE INHERITANCE TAX BASE, 1975

There is available a table of D.C. inheritance tax returns for 1965 decedents prepared from a hand tabulation done by Mr. Alfred Rector, presently Head of the Interitance Tax Audit Office of the D.C. Revenue Division. Some of the Rector data is reproduced in Table A–1. In aggregate we would not expect this to look much different from

the current tax base, particularly at the higher estate levels where a great deal of the tax base is common stock, since common stock prices (Standard and Poor's 500) changed only slightly between those years (88.17 in 1965, 85.17 in 1975). Table A.2 shows for the years 1952–1971 both Federal Estate and Gift tax collections and the Standard and Poor's 500 stock price index a period in which both series increase about 5 times. The close connection between stock prices and estate tax collections about a year later is obvious. (In 1972 estate tax collections were speeded up resulting in a bulge in the data for that year.)

TABLE A-1.—COMPARISON OF DISTRIBUTION OF ESTATE SIZES BRANNON DATA AND RECTOR DATA

	Rector		Brannon		
Estate size (Rector)	No. of estates	Amount of estate (million)	No. of estates	Amount of estates (million)	Estate size (Brannon)
Under $55,000	2,181	$31.6	1,768	$23.8	Under $50,000.
$55,000-$80,000	147	9.7	424	29.4	$50,000-$100,000.
$80,000-$130,000	197	19.8			
$130,000-$230,000	114	19.8	240	31.1	$100,000-$200,000.
$230,000-$330,000	59	15.8	50	11.7	$200,000-$300,000.
$330,000-$550,000	46	19.3	28	10.9	$300,000-$500,000.
$550,000 up	71	85.6	28	25.8	$500,000 up.

Source: Rector data from L. L. Ecker-Racz "Financing the District of Columbia," 1968, p. 41.

TABLE A-2.—FEDERAL ESTATE AND GIFT TAX YIELDS AND COMMON STOCK PRICES—18 MONTHS EARLIER

Fiscal year	Federal estate and gift tax revenues (billion)	Common stock prices (Standard and Poor 500)	Calendar year
1971	$3.74	$97.8	1969
1970	3.64	98.7	1968
1969	3.49	91.9	1967
1968	3.05	88.9	1966
1967	2.98	88.2	1965
1966	3.07	81.4	1964
1965	2.07	69.9	1963
1964	2.39	62.4	1962
1963	2.17	66.3	1961
1962	2.02	55.8	1960
1961	1.90	57.4	1959
1960	1.61	46.2	1958
1959	1.33	44.4	1957
1958	1.39	46.2	1956
1957	1.36	40.5	1955
1956	1.16	30.6	1954
1955	.92	25.5	1953
1954	.93	25.3	1952
1953	.88	23.8	1951
1952	.81	19.8	1950

Source: "Statistical Abstract," various years. The stockprice index before 1955 is the old Standard and Poor index of 480 stocks linked to the 1955 figure for the Standard and Poor 500.

Because our report deals with the detailed structure of the D.C. tax, we undertook a sample tabulation of various characteristics of D.C. inheritance tax returns for 1975. Due to time limitations the main sample was drawn by examining each fourth file from the first half of an alphabetical array of tax files for deaths in 1975. The sample was drawn in May 1977 so some late filings were omitted. This sampling procedure predictably produced few very large returns which account for the bulk of the revenue. We supplemented this sample with a sample of the last half of the alphabetical array in which we selected only returns with net estates over $100,000.

Our tabulation recorded the shares going to the various classes of heirs and the associated tax. Frequently this entry was written over as a result of the audit process. We recorded as well as we could, the final tax liability without regard to penalties and interest.

Separately, for returns in the first one in 4 sample we compared the categories of assets between the Federal return and the D.C. return where both returns were available.

The pinciple value of the new tabulation is in the data on dispositions of estates of D.C. decedents. Previously no such estimates were available. The data is subject to random error. The sampling reliability is indicated in Table A3.

Apart from this sampling reliability with regard to the way in which various sized estates are divided, our sample is subject to some potential bias arising from the circumstance that some late filings with regard to large estates may have resulted in their being excluded from the drawers from which we drew this sample.

Some indication of the bias is suggested by a comparison of our data with the Rector data which is presented in Table A1. The two data sets seem broadly consistent except in the category of very large estates where our data is conspicuously low.

The number of very large estates is, of course, subject to random variation from year to year. Actually the collection of death tax in D.C. were above trend in both fiscal years 1966 and 1967 when returns on 1965 deaths would have been recorded. (Receipts were $5.1 million in fiscal year 1965, $6.6 million in 1966, $6.7 million in 1967 and $5.8 million in 1968.)

Nevertheless we think that there is some appreciable bias in the Brannon data in the form of understatement of large returns. This could be a combination of late filings of large returns and unusual circumstances in 1975 deaths. This suggests that for purposes of making detailed revenue estimates it would be appropriate to double the estimates given for the above $500,000 estate size in the tables in the basic report on pp. 15, 16, 37 and 38. Since this would involve mainly the total dollar revenues it would have relatively little impact on the comparison between the present system and our proposed system.

Excluding this bias adjustment, our sample is subject to random error in the information that for purposes of making detailed revenue estimates it was appropriate to double the dollar estimates given for the above $500,000 estate size in the tables 7, 8, 12, and 13. This would lead to an estimate of present law tax of about $8 million which is broadly consistent with present projections of current revenue. This adjustment has negligible effects on the implication that our suggested amendments would produce a nearly 50 percent increase in revenues. The adjustment does indicate that the revenue "increase" would fall somewhat faster than suggested originally if the top bracket rate were set lower.

TABLE A-3.—SAMPLING RELIABILITY OF ESTATE TAX RETURN SAMPLE

[Numbers in parentheses are standard errors]

Estate size	Percentage making bequest to—					
	Spouse	Children	Grand-children	Ancestors	Brother/sister	Other
Below $50,000	33(3.5)	29(3.5)	2(1.0)	2(1.0)	18(3.0)	22(32)
$50,000 to $100,000	38(6.7)	32(6.4)	6(3.2)	[1] 1	23(5.8)	26(6.0)
$100,000 to $200,000	13(6.1)	30(8.4)	[1] 3	[1] 3	30(8.4)	47(9.1)
$200,000 to $300,000	38(9.0)	48(9.3)	7(4.7)	----------	24(7.9)	48(9.3)
$300,000 to $500,000	38(12.1)	50(12.5)	12(8.1)	----------	25(10.8)	44(12.4)
$500,000 up	76(10.7)	44(8.2)	25(10.8)	----------	[1] 6	56(12.4)
	Average amount (dollars in thousands) left to—					
	Spouse	Children	Grand-children	Ancestors	Brothers/sister	Others
Below $50,000	19(1.6)	17(1.5)	20(10.0)	3(0.8)	15(3.2)	15(2.2)
$50,000 to $100,000	66(3.1)	65(5.6)	7(10.0)	[1] 64	52(7.4)	37(7.5)
$100,000 to $200,000	122(9.9)	128(10.0)	[1] 30	[1] 20	105(17.0)	89(15.0)
$200,000 to $300,000	178(17.0)	173(20.0)	[1] 56	----------	90(30.0)	117(23.0)
$300,000 to $500,000	283(54.0)	234(44.0)	[1] 182	----------	251(50.0)	188(66.0)
$500,000 up	533(105.0)	425(66.0)	923(460.0)	----------	[1] 20	191(60)

[1] Too few cases to compute sampling error.

GAMBLING TAXATION IN THE DISTRICT OF COLUMBIA

(By Daniel B. Suits, Department of Economics, Michigan State University and The University of Hawaii)

I. Purpose

In this report, gambling is analysed as a revenue source to the District of Columbia, with particular attention to four games: (1) a District lottery, (2) a numbers game, (3) a horse track, and (4) offtrack betting facilities. For each game, a total betting is projected and the District share of the proceeds is estimated. Moreover, betting by residents of the District of Columbia is examined separately from betting by residents of nearby communities, but no effort is made to estimate betting by tourists or business visitors to Washington.

In addition to total revenue prospects, that portion of gambling revenue raised from residents of the District of Columbia is examined by income brackets to determine its regressivity as a revenue source and to compare it with other types of taxation.

Some general consideration is given to the possibilities of casino gambling in the District. To a much greater degree than other forms of gambling, however, casino revenues depend heavily on customers attracted from outside the immediate vicinity. The prospects for casinos within the District of Columbia, therefore, depend on the success of competing ventures now being started in Atlantic City and on the likelihood that success there would lead to rapid imitiation elsewhere in the vicinity. For this reason, it was deemed impossible to provide firm revenue projections for casino gambling.

II. Conclusions

1. The most promising revenue source for the District of Columbia is off-track betting which should yield about $47 million per year in tax receipts. About 37 percent of the total would come from betting by District residents, the remainder from residents of nearby areas in Maryland and Virginia. A substantial portion of this revenue represents diversion of receipts from illegal bookmaking operations rather than additional gambling. Moreover, taxes on offtrack betting raise revenue from individuals nearly in proportion to family income. This proportionality is in contrast to other types of gambling, which place the heaviest burden on the poorest people.

2. A new horse track within the District would generate a projected revenue of about $29.8 million annually, but most of this revenue represents diversion to the new track of taxes on bets hitherto placed at other tracks in the area. Wide variation in result is possible depending in the relative attractiveness of the new track and on the competi-

tive responses of the older tracks to the loss of revenue to the new one. This is an additional reason why the track is viewed less favorably than offtrack betting as revenue source

Parimutuel taxes levied at the track appear to be somewhat more regressive than taxes on offtrack betting, although little more regressive than general retail sales taxes.

3. A government-operated numbers game promises revenue of nearly $13 mililon per year, of which 34 percent would be furnished by residents of the District. A numbers game would be in competition with a similar game already in operation in Maryland, and some effort has been made to allow for this competition in the estimate. As source of revenue, a numbers game would be much more regressive than parimutuel taxes, and would, in fact, be about three times as regressive as the sales tax.

4. A District lottery might yield about $8.5 million in revenue, of which about a third would come from residents of the District. This total, however, represents the revenue potential of a lottery operated without competition from a numbers game. If both a lottery and a numbers game were in operation, total receipts from the two combined would fall considerably short of the sum of the two taken separately.

As a revenue source, a lottery is only slightly less regressive than a numbers game.

5. Gambling casinos are a relatively poor revenue source. Although they attract a lot of betting, the low tax rates necessary for the prosperity of the operation generate little in the way of tax receipts. Casinos can contribute to the revitalization of a resort or recreational area, as in Atlantic City, but would add little to Washington, and would probably detract from its image as the nation's capital.

6. There is no reason to suppose that District-operated lotteries, numbers games, or offtrack betting facilities would attract criminal elements beyond what would be expected for any organization with large cash flow. Indeed, to the extent that legal numbers and offtrack betting provide substitutes for existing illegal operations, they tend to diminish the area of operation for organized crime. Race tracks, usually operated as a private business under governmental supervision and regulation, require due care to circumvent investment and control by undesirable elements.

7. Revenue from state-operated gambling represents profits from the monopolization by the state of a product greatly in demand. As such, state-operated gambling is as great an imposition on its consumers as any other monopoly and is subject to the same moral and economic structures. On the other hand, offtrack betting is a less regressive revenue source than most that are currently employed for state and local finance. Moreover, about two-thirds of projected gambling revenues can be expected to come from nonresidents of the District, so gambling represents one way of tapping nonresident sources for support of District services, many of which are provided for nonresident benefit.

III. Method of Analysis

A. NATIONAL SURVEY

All findings presented here are based on data obtained in a nationwide survey of gambling behavior conducted in 1975 by the Survey

Research Center of the University of Michigan, under contract with the Commission for the Review of the National Policy Toward Gambling (hereafter cited as the Gambling Commission). The results of the Survey were reported to the Gambling Commission in Kallick, Suits, Dielman and Hybels (1976) and appear as Appendix 2 to the published Final Report of the Commission.

The overview of this survey in Table A reveals that income is the most important factor affecting gambling behavior. Not only is there greater variation in gambling behavior according to income than according to any other personal characteristic, but much of the variation that would appear on the surface to be associated with demographic and ethnic factors is merely the reflection of income differences. Association of gambling with differences in education or ethnic status, for example, is largely the result of underlying income differences.

For this reason, projections of gambling based on income distributions of residents of the District of Columbia and surrounding areas already embody the most important factors bearing on gambling behavior and no effort was made to adjust them on the basis of other characteristics of the population.

Among other findings, the survey showed the percentage of adults in each income bracket who reported betting on each of a number of commercial gambling games during the year 1974, and the number of dollars ventured per bettor, on the average, during the year.

TABLE A.—BETTING PARTICIPATION OF AMERICAN ADULTS, BY PERSONAL CHARACTERISTICS

	Percent who bet during 1974	
	All types of bets	Commercial bets only
Total sample	61	48
Men	68	52
Women	55	45
White	62	48
Black	55	45
Other	(2)	(2)
Catholic	80	66
Protestant	54	43
Jewish	77	69
Other, including no preference	40	35
Did not graduate high school	41	34
High school graduate	66	52
Some college	72	56
College graduate	79	61
Family income under $5,000	24	20
$5,000–$9,999	51	41
$10,000–$14,999	69	50
$15,000 or more	74	59

[1] Commercial bets, include all wagers placed with casinos, lotteries, tracks, numbers games, or any other legal or illegal betting establishment operated for revenue or profit. Only bets between friends are excluded.
[2] NA—Not available.

Source: M. Kallick, D. Suits, T. Dielman, and J. Hybels (1975).

B. APPLICATION TO THE DISTRICT OF COLUMBIA AND NEARBY AREAS

To apply these data, income distributions were compiled for the District of Columbia and for residents of nearby areas in Maryland and Virginia. For this purpose, "nearby areas" were taken to consist of that portion of the census District of Columbia-Maryland-Virginia Standard Metropolitan Statistical Area (SMSA) that lies outside the District of Columbia. The total SMSA consists of the District of Columbia plus the counties of Charles, Montgomery, and Prince Georges

in Maryland, and Arlington, Fairfax, Loudoun, and Prince William, Virginia, with the cities Arlington, Fairfax, Falls Church, and Fredericksberg.

The total 1974 population of the SMSA was 3,015,000 persons, of whom an estimated 2 million were 18 years of age or older. Of these adults, about 485,000 resided within the District of Columbia, and the remaining 1,515,000 lived in nearby areas. Income distributions for the two groups, estimated as of 1974 to match the survey data, are shown in Table 1.

TABLE 1.—INCOME DISTRIBUTION, DISTRICT OF COLUMBIA AND NEARBY AREAS, 1974

1974 family income	Number of adults	
	District of Columbia	Nearby areas
Under $5,000	58,200	61,800
$5,000–$9,999	92,200	147,800
$10,000–$14,999	101,800	178,200
$15,000–$19,999	72,800	287,200
$20,000–$29,999	77,600	462,400
$30,000 or more	82,400	377,600
Total	485,000	1,515,000
Median income	$14,500	$21,700

Source: Percentage distribution of families was estimated by plotting 1969 income distributions from the U.S. census of of 1970 on log-normal paper and shifting the curves parallel on the basis of the percentage increase in per capita income from 1969 to 1974. (See Spiro (1974) and references cited there.) Resulting 1974 distributions were then applied to total 1974 adult populations to obtain number of adults shown.

C. REVENUE ESTIMATES

Estimates of potential revenue from each game were then obtained as follows. The percent of adults in each income bracket who reported betting on the game was applied to the number of adults in the income bracket to get the projected number of bettors. This was then multiplied by the average bet per bettor to obtain an estimate of the total number of dollars bet annually by people in each income bracket. Summed over all brackets, this yielded the estimate of annual betting volume (annual handle) expected for each game. Revenue estimates were then produced by multiplying the projected annual handle by the tax rate usually applied in states where the game is in legal operation.

D. REGRESSIVITY OF TAXES

To determine how the burden of the resulting tax revenue would be distributed among income groups, the percentage distribution of tax revenue is compared to the percentage distribution of income. The results are visually presented in chart form and summarized in an index (S) whose value can range from +1 at the extreme range of progressive tax, through 0 for a tax strictly proportional to income, to −1 at the extreme of tax regressivity.

IV. Revenue Estimates for Four Types of Gambling

A. DISTRICT LOTTERY

A variety of lottery designs are available. Perhaps the most important differences are (1) whether prizes are paid in cash or in goods

of some kind—automobiles, paid vacations and similar prizes have been used, and (2) whether prizes are paid immediately upon purchase of the ticket—the "instant" lottery—or only after a drawing held a week or more later. Lotteries are also sometimes structured so that certain tickets not receiving prizes on one drawing are eligible for prizes at a subsequent drawing.

Experience has indicated strong public preference for money rather than goods as prizes. Moreover, recent experience shows considerable preference for "instant" lotteries in most jurisdictions. "Instant" lottery tickets make up more than half of total sales nationwide, and reach 84 percent of total in New Hampshire and 87 percent in Delaware. On the other hand, in Ohio, where weekly drawings are presented in a television feature, "instant" tickets made up only 12 percent of gross lottery sales in 1976.

As set by law, lottery prizes vary from state to state from a low of 40 percent of gross sales in New York to a high of 50 percent in New Hampshire, with a national average of about 45 percent. As reported by the Gambling Commission (Final Report, 1976), operating costs average about 13 percent of gross sales, leaving about 42 percent of gross sales as net revenue to states.

Lottery tickets are generally available in denominations of $.25, $.50 and $1, with prizes varying accordingly, but there is no evidence that denomination of ticket is an important factor in demand, at least within the observed range. Prizes are adjusted so that the expected value of the winnings from four 25-cent tickets is equal to that from a single $1 ticket. The only difference is that four separate tickets offer a greater probability of winning a smaller prize rather than nothing at all.

The estimating procedure for the lottery is summarized in Table 2. For the District of Columbia, percentage of lottery ticket buyers (percent who bet) in each income bracket is set on the basis of figures reported in the national survey by residents of states then operating lotteries.

TABLE 2.—ESTIMATED REVENUE FROM A DISTRICT LOTTERY

	Family income						
	Under $5,000	$5,000–$9,999	$10,000–$14,999	$15,000–$19,999	$20,000–$29,999	$30,000 or more	Total
DISTRICT OF COLUMBIA							
Bettors:							
Percent	30.6	45.5	52.5	60.0	57.4	50.6	50.1
Number	17,810	41,950	53,450	43,680	44,540	41,690	243,120
Annual bet:							
Per bettor	$24.43	$37.16	$32.07	$18.59	$24.79	$17.24	$26.09
Total (thousands)	$435	$1,559	$1,714	$812	$1,104	$719	$7,433
SMSA OUTSIDE DISTRICT OF COLUMBIA							
Bettors:							
Percent	20.5	30.5	35.2	40.0	38.5	33.9	35.7
Number	12,700	45,100	62,700	114,900	178,000	128,000	541,400
Annual bet:							
Per bettor	$24.43	$37.16	$32.07	$18.59	$24.79	$17.24	$23.55
Total (thousands)	$309	$1,676	$2,011	$2,136	$4,413	$2,207	$12,751
Total bet (thousands) (gross sales of tickets)	$744	$3,235	$3,725	$2,948	$5,517	$2,925	$19,094

Note: Net revenue (at 42 pct of gross sales) $8,019,000 of which 33.2 pct is raised from the District of Columbia.

Residents of the SMSA outside the District who commute daily to jobs in the District will have essentially the same exposure and opportunity to buy tickets as residents of the District. Those nonresidents who do not commute, however, will have less opportunity to purchase District tickets. Moreover, many of these people are presented with ample opportunity to participate in competing games in Maryland. Taking nonresidents as a whole, therefore, average participation in the District lottery will be lower than that of District residents with the same family income. It is impossible to say in advance how great this difference will prove to be. To make some allowance, participation by residents of the SMSA outside the District was arbitrarily set one-third lower than that of residents.

Total gross ticket sales as projected on this basis slightly exceed $19 million per year. After allowing the nationwide average of 13 percent of sales for operating cost and 45 percent for prizes, we find net revenue to the District of Columbia of about $8 million annually. About one-third of this is raised from residents of the District.

No allowance has been made for sale of lottery tickets to persons residing outside the SMSA. There will, of course, be some purchase of tickets by visitors, especially those from states that do not now operate lotteries, but this contribution to receipts is expected to be small for several reasons. In the first place, many visitors are in Washington for business and related purposes and are less inclined to participate in lotteries than people who live or work there all the time, and for whom the lottery has become a regular habit. Secondly, tickets that offer a payoff at a drawing to take place after the visitor has gone home are unattractive to people from out of town. This problem might be reduced with the "instant" lottery, but it should be noted that strong concentration of effort on an "instant" lottery played on the spot would probably reduce participation by noncommuting residents of the SMSA area outside the District.

B. NUMBERS

A numbers game is a special type of lottery in which the player bets on a number of his own choice rather than merely accepting a number on a pre-printed ticket. Winning numbers are produced by some random method and all bets on the winning number are paid. In the illegal version of the game, information about the winning number is made public, and customer confidence in the game is maintained by employing some widely published and readily available number as the winner—for example, the last three or four digits of the number of shares traded during the day on the New York Stock Exchange. Since results of a legal lottery can be published as such, and since ticket buyers can have confidence in the official process, a legal system can employ a random drawing just as for a regular lottery, conceivably as a daily television feature.

The illegal version of the game pays winners at fixed odds, set to pay out about 40 percent of gross sales, retaining about 60 percent for the operator in the long run. For example, the probability that a given three-digit number will appear in a situation where any number is equally probable is 1 in 1,000. One dollar bet on such a number would win $400.

Legal numbers as operated in Rhode Island pays fixed odds set to return 50 percent of gross ticket sales in prizes and to yield 50 percent as gross revenue to the state in the long run. In New Jersey and Massachusetts, the payoff is on a pari-mutuel basis. This feature makes it possible for the bettor on an unpopular number to receive a very large prize. At the same time, it guarantees that the state will receive its designated share of gross sales every day regardless of how many bettors hold winning tickets. The pari-mutuel system pays out 50 percent of gross sales in Massachusetts and 60 percent in New Jersey.

During 1974, the year covered by the national survey, there were no legal numbers games yet in operation. Slightly more than 3 percent of the people surveyed reported playing the illegal game, and these ventured an average of $274 during the year. Expanded availability of a legal version of the game greatly enlarges participation, and the estimate has been founded on the supposition that participation in the numbers game might equal what is currently observed of ticket buying in states that operate lotteries. At the same time, however, the newly attracted players are unlikely to venture as much on numbers as the patrons of the old illegal game were observed to do. For purposes of estimation, it has been conjectured that betting by the average "new" numbers player would be much like that observed for buyers of lottery tickets. It follows that the average annual bet on numbers should be a weighted average of the bets ventured by the 3 percent of the population who play the illegal game at the present time, and the amounts expected from the 47 percent of the population expected to be newly attracted to the game. These weighted averages form the figures given in Table 3. As with the lottery, participation by residents of the SMSA outside the District of Columbia has been taken at two-thirds that of residents of the District.

TABLE 3.—ESTIMATED REVENUE FROM A NUMBERS GAME

	Family income						
	Under $5,000	$5,000–$9,999	$10,000–$14,999	$15,000–$19,999	$20,000–$29,999	$30,000 or more	Total
DISTRICT OF COLUMBIA							
Bettors:							
Percent	30.6	45.5	53.5	60.0	57.4	50.6	50.1
Number	17,810	41,950	53,450	43,680	44,540	41,690	243,120
Annual bet:							
Per bettor	$25	$62	$53	$28	$32	$26	$40
Total (thousand)	$445	$2,601	$2,833	$1,223	$1,452	$1,084	$9,638
SMSA OUTSIDE DISTRICT OF COLUMBIA							
Bettors:							
Percent	20.5	30.5	35.2	40.0	38.5	33.9	35.9
Number	12,700	45,100	62,700	114,900	178,000	128,000	541,400
Annual bet:							
Per bettor	$25	$62	$53	$28	$32	$26	$35
Total (thousands)	$318	$2,796	$3,323	$3,217	$5,696	$3,328	$18,678
Total bet (thousands)	$763	$5,397	$6,156	$4,440	$7,148	$4,412	$28,316

Note: Net revenue (at 37 pct of handle) $10,467,000 of which 34 pct is raised from residents of the District of Columbia.

As shown in the table, the result is a projected sale of numbers tickets of $28,289,000 per year. If 50 percent of gross sales are paid

out in prizes while operating costs amount to 13 percent as for the lottery, 37 percent or $10,467,000 would remain to the District as net receipts. Thirty-four percent of this amount would be raised from residents of the District of Columbia.

C. PARI-MUTUEL HORSE TRACK

The percentage of adults projected to visit the track during a year, given in Table 4, is developed from the survey data reported by people who live in the New York-New Jersey metropolitan area where, as in the case of the District of Columbia, a number of tracks are readily at hand. Average bet per bettor assumed for the District corresponds to the U.S. average of persons living within 25 miles of a large central city. The percentage of residents of nearby areas expected to visit the track at least once a year is taken to be the same as for District residents, but because some of these people are not employed in the District, and the homes of many are already convenient to other tracks, average annual bet has been taken at about half that for residents of the District. On this basis, pari-mutuel handle at the track is projected at $298.2 million. A pari-mutuel tax of 10 percent—about average for the United States—would yield $29.8 million revenue, of which about 35 percent would be contributed by residents of the District of Columbia.

These projections must be qualified in an important respect, however. A new track in the District of Columbia will draw most of its patronage from the eight existing tracks now operating in Maryland, Delaware and West Virginia. If loss of patronage at these tracks is countered by competitive action such as improved quality of field, new and attractive exotic bets, or increased pari-mutuel payout, revenues at the District track could fall considerably short of estimates.

TABLE 4.—ESTIMATION OF REVENUES FROM A PARIMUTUEL TRACK

	Family income						
	Under $5,000	$5,000 to $9,999	$10,000 to $14,999	$15,000 to $19,999	$20,000 to $29,999	$30,000 or more	Total
DISTRICT OF COLUMBIA							
Bettors:							
Percent	14.3	25.5	18.4	28.2	34.3	33.3	25.8
Number	8,300	23,500	18,700	20,500	26,000	27,400	125,000
Annual bet:							
Per bettor	$411	$650	$878	$1,280	$653	$967	$842
Total (thousands)	$3,411	$15,275	$16,419	$26,240	$17,370	$26,496	$105,211
SMSA OUTSIDE DISTRICT OF COLUMBIA							
Bettors:							
Percent	14.3	25.5	18.4	28.2	34.3	33.3	25.8
Number	8,800	37,700	32,800	81,000	158,600	125,700	444,600
Annual bet:							
Per bettor	$206	$325	$439	$640	$327	$484	$434
Total (thousands)	$1,813	$12,353	$14,399	$51,840	$51,862	$60,839	$193,006
Total bet (thousands)	$5,224	$27,528	$30,818	$78,080	$69,232	$87,335	$298,217

Note: Total revenue (at 10 percent of handle) $29,822,000 of which 35 percent is raised from residents of the District of Columbia.

D. OFF-TRACK BETTING

As the name implies, off-track betting legally supplies the customer with essentially the same book-making service available from an illegal bookmaker. Legal off-track betting generally pays off at odds generated by a pari-mutuel system linked into the system at the track, but can also be arranged to pay off on a pari-mutuel basis limited to wagers placed at off-track facilities alone. In either case, the resulting take-out is divided among participating tracks and governments. In New York, the division of the pari-mutuel take-out between government and tracks is prescribed by law. In Connecticut, which operates no race tracks, off-track betting parlors accept bets on New York races under special contract with New York tracks. Betting parlors in Nevada, operating privately under state supervision, are licensed to accept bets on races anywhere in the nation, but make no contribution to the tracks involved. In addition to bets at New York tracks, off-track betting parlors in New York are permitted to accept bets on special "national feature" races such as the Kentucky Derby and the Preakness. The share of proceeds to go to the track under these circumstances is determined by contract with the track, subject to a limit unilaterally prescribed by New York law. Churchill Downs refused to enter a contract with the New York off-track betting system with regard to bets placed on the Kentucky Derby, but for several years the New York system has accepted bets on the race despite the absence of agreement. The share of proceeds that would otherwise go to Churchill Downs is paid over to New York tracks.

TABLE 5.—ESTIMATED REVENUE POTENTIAL OF OFF-TRACK BETTING

	Family income						
	Under $5,000	$5,000 to $9,999	$10,000 to $14,999	$15,000 to $19,999	$20,000 to $29,999	$30,000 or more	Total
DISTRICT OF COLUMBIA							
Betters:							
Percent	9.9	14.8	21.2	27.3			18.4
Number	14,900	15,000	15,400	43,700			89,000
Annual bet:							
Per better	$1,594	$354	$743	$1,412			$1,148
Total (thousands)	$23,751	$5,310	$11,442	$61,704			$102,207
SMSA OUTSIDE DISTRICT OF COLUMBIA							
Betters:							
Percent	6.6	9.9	14.2	18.3			14.9
Number	13,800	17,600	40,800	153,700			226,000
Annual bet:							
Per better	$1,594	$354	$743	$1,412			$1,219
Total (thousands)	$21,997	$6,230	$30,314	$217,024			$275,566
Total bet (thousands)	$45,728	$11,540	$41,755	$278,728			$377,773

Note: Total revenue (at 12.5 percent of handle) $47,222,000 of which 37 percent is raised from residents of the District of Columbia.

Although the legal position is cloudy, there would appear to be no barrier to the District of Columbia unilaterally setting up and operating an off-track betting system that would accept bets on races at some or all tracks in the area.

Revenue projections for off-track betting are derived in Table 5. Percentages of population expected to patronize the facilities are set to correspond to patronage of New York off-track betting parlors by residents of the New York area. Patronage by residents of nearby areas has been set at two-thirds that of residents of the District. Average annual bet per bettor is that reported by corresponding residents of New York.

The projected handle of an off-track betting system would be about $377.8 million per year. At the 12.5 percent tax rate applied in New York, this would yield $47.2 million in revenue per year, of which 37 percent would be raised from residents of the District of Columbia.

Comparison by Suits and Hybels (1976) of survey results on track attendance and betting in New York with that in jurisdictions without off-track betting, and comparison of track attendance by OTB patrons with that of other New Yorkers indicate that off-track betting parlors are not a serious competitor for betting at tracks. It would appear that horse players tend to visit the track regularly in any event, but the availability of legal off-track facilities tends to reduce the volume of betting through illegal channels. Testimony before the Gambling Commission during hearings held in June, 1976, indicated, in fact, that some illegal New York bookmakers have actively encouraged their customers to use the legal facilities for betting on horses leaving the bookmaker free to concentrate on sports betting for which no legal competition exists.

V. The Burden of Gambling Revenues on Residents of the District of Columbia

State-sanctioned gambling can raise revenue in two different ways. In one case—as in Nevada gambling casinos, and most pari-mutuel tracks—gambling facilities are provided by private operators and state revenue is obtained by taxation of the proceeds. In other cases—as in state lotteries—the state itself provides the facilities and services, setting the pay-out below gross sales of tickets and taking the remainder as revenue. It is sometimes argued that the first of these is a "tax," whereas the second is merely a "price" that a buyer voluntarily pays for services received. The latter argument usually continues with the assertion that since the buyer is "free" to buy the service or not, it is inappropriate to treat revenue thus raised as a "burden" like a tax and that examination of its regressivity is irrelevant.

This argument, however, confuses a distinction of form with one of economic substance. The excise tax on a bottle of liquor is no less a tax because the buyer does not "need" the liquor and is "free" not to purchase it if he so chooses. Nor is the cost to the buyer and the revenue burden on him any different where the state establishes a legal monopoly of liquor sales and simply incorporates the erstwhile tax in the final monopoly price of the product. The end result is exactly the same: contribution to state revenue is in proportion to the purchase of liquor, and the burden of financing state services in apportioned among income groups in proportion to their demand for liquor.

Precisely the same consideration governs receipts from gambling. It is immaterial whether the revenue is contributed in the form of a

pari-mutuel "tax" or in the form of monopoly "profit" from a state-operated business. The burden of financing state services is distributed among income groups in proportion to the amounts they wager on the respective games. Put in another way, it is immaterial whether the state levies taxes on the things that people buy or whether it monopolizes these same things and obtains revenue from monopoly prices. People bear exactly the same revenue burden in the same way in either case.

It has already been shown that from 33 to 37 percent of revenue from gambling would be contributed by residents of the District of Columbia. In this section, we examine how the burden of that fraction is spread among family income groups.

The basic data appear in Tablet 6. The first two columns of the table show the accumulative income distribution of residents of the District of Columbia. For example, the table shows that the poorest families—those with incomes under $5,000—constitute 12 percent of all residents of the District, but receive only 1.7 percent of the total income earned by all families in the District. Likewise, 31 percent of families had incomes below $10,000, and these earned 9.7 percent of total District income. As we proceed to larger and larger incomes, a larger percentage of both families and income is accounted for until, in total, 100 percent of families earn 100 percent of District income.

TABLE 6.—DISTRIBUTION OF BURDEN OF TAX REVENUES RAISED FROM RESIDENTS OF THE DISTRICT OF COLUMBIA

Family income	Accumulated Families	Percent income	Accumulated percent of revenue from: Lottery	Numbers	Track	Off-track betting
Less than:						
$5,000	12	1.7	6.9	4.6	3.3	NA
$10,000	31	9.7	31.4	31.7	17.7	23.2
$15,000	52	24.5	58.5	61.2	33.3	28.4
$20,000	67	39.2	71.3	73.9	58.3	39.6
$30,000	83	61.7	88.7	89.0	74.8	NA
Total	100	100.0	100.0	100.0	100.0	100.0
Index of regressivity (S)			−0.35	−0.46	−0.20	−0.05

The remaining columns of Table 6 display the share of revenue supplied by these same families. For example, the 12 percent of District families who earned 1.7 percent of total income would contribute 6.9 percent of the total revenue raised by lottery from District residents. This same group of families would contribute 4.6 percent of the revenue raised from the District by taxation of numbers, and 3.3 percent of all revenue contributed by District residents at the track. The corresponding share of off-track revenue expected from this group is not available (n.a.). Lines in the table corresponding to larger incomes are similarly interpreted.

Inspection of Table 6 immediately conveys some idea of the way respective revenue burdens are distributed in comparison to income. If revenues were raised from each group strictly in proportion to its income, shares of revenue contributed would equal the share of income

earned by each group. That is, families with incomes under $5,000, who earn 1.7 percent of total income, would also contribute 1.7 percent of total revenue. Those with incomes under $10,000, who earn 9.7 percent of income, would also bear 9.7 percent of total revenue burden, and so on.

In fact, however, low-income families are seen to contribute a larger than proportional share of revenues from gambling. The poorest families, with 1.7 percent of income, would furnish 6.9 percent of tax income from the lottery, 4.6 percent of that raised by numbers, and 3.3 percent of total pari-mutuel taxation raised on Distist residents. Similar disproportionalities can be seen for other income groups.

It facilitates comparison to display the fact graphically as in Figure 1, where accumulated percentage of revenue borne is plotted vertically against percentage of family income on the horizontal scale. If revenue were raised in strict proportion to income, the resulting plot would follow the diagonal line of proportionality shown in the figure. But when, as with taxes on gambling, revenue is raised in greater proportion from poor than from rich families, the plot arches above the diagonal line. Moreover, the greater the disproportion of the burden borne by poor families, the higher the arch reaches. (By the same token, a progressive tax that places revenue burdens disproportionately on the richer families would be represented by a curve that sags below the diagonal. And the more progressive the tax, the greater the sag in the curve will be.)

Inspection of the chart shows clearly that revenue raised from numbers games would constitute the most regressive of the taxes shown, closely followed by the lottery. Revenue raised at the track is somewhat less regressively borne, and—as indicated by the approach of the curve to the diagonal line of proportionality—contributions to taxes on off-track betting are made almost in proportion to income.

Although the chart is adequate for many purposes, a more exact index, S, can be calculated from the data to provide an exact numerical measure of the regressivity of the different taxes. It has been shown (Suits, 1977) that the index for a strictly proportional tax has the value $S=0$, whereas the index of a regressive tax is negative. The more regressive the tax, the less the value of the index S, and in the limit the index approaches the value $S=-1$ as the curve corresponding to the tax arches higher and higher above the diagonal of the figure. (Progressive taxes have positive index values, and the index increases, approaching $+1$ as the corresponding curve sags more and more deeply below the diagonal.)

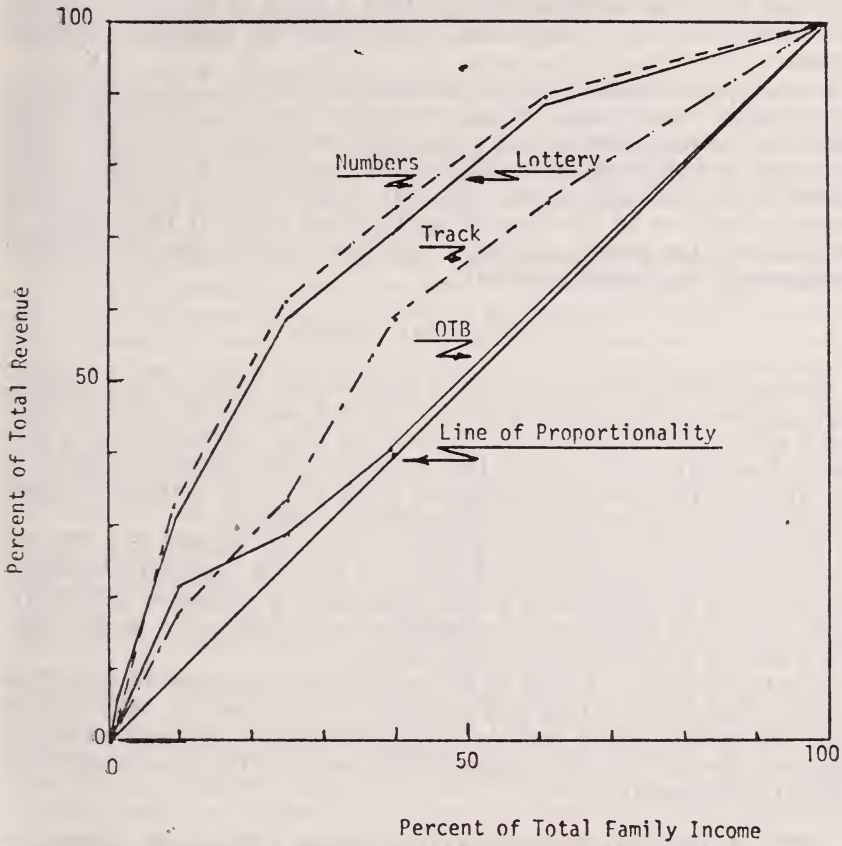

FIGURE 1.—Regressivity of gambling revenues in the District of Columbia.

Values of the index S, calculated for the respective taxes, are shown at the foot of Table 6. The indexes bear out what can be seen in the chart. Revenue derived from numbers is mostly heavily contributed by poor families (S=−.46), with lottery running a close second. Parimutuel taxes collected at the track are considerably less regressive (S=−.20), whereas taxes on off-track betting are collected nearly in proportion to income (S=−.05). For comparison, value of the index calculated for all U.S. sales and excise taxes is S=−.15. For the U.S. individual income tax, the index is S=+.19.

In other words, these results show that revenue raised from numbers games and lotteries is two to three times more regressive than sales tax. Pari-mutuel taxes at the track are only slightly more regressive than sales taxes, whereas taxes on off-track betting are much less regressive than sales taxes.

Two important qualifications should be added to this distribution of tax regressivity. First, what has been examined here is the distribution of the burden of that part of the revenue that would be raised from residents of the District of Columbia. It should be borne

in mind that this constitutes only about a third of the total burden. The remainder is, in any case, contributed by residents of other areas.

Secondly, although we have spoken of "burden," it is necessary to recognize that much of this revenue does not represent a net addition to the outlay of the population on gambling, but to a considerable although undetermined extent consists of a transfer to the District of Columbia of receipts that would otherwise go to other jurisdictions (as in the case of pari-mutuel taxes at the track) or would swell the profits of illegal operators (as the case of off-track betting and, to a degree, numbers).

VI. Gambling Casinos

Casinos attract large numbers of patrons and large volume betting. Low take-out rates, and corresponding low tax rates, however generate relatively little revenue. Nevada tax rates average about 5 percent of casino take-out, and this produces only about a quarter of the revenue that could be expected from off-track betting or horse tracks for the same population of potential customers.

The primary role of casino gambling in urban development is as a center and attraction for other kinds of activity, especially for conventions and tourism. This is the expectation for casinos in Atlantic City; they are intended to regenerate a once-popular resort area. They are not primarily a revenue measure.

For this reason it would be inappropriate to attempt to introduce a casino-based convention and recreation center into the Washington area. The area is not in need of additional visitors, and casinos would seriously detract from its image as the center of the government and the national capital.

VII. A General View of Gambling as a Revenue Source

Two general objectives are frequently advanced in support of legal gambling: (1) that it provides revenue to the state (and in a particularly painless fashion), (2) that it helps to curb illegal gambling and organized crime. In fact, however, these two objectives are to a considerable degree contradictory. When the state prohibits any activity that is greatly in demand, illegal enterprisers almost inevitably find it profitable to create an illicit supply to satisfy that demand. The activity is highly profitable, not because there is anything intrinsically profitable in illegal traffic, but because legal restriction of the supply tends to leave the illegal operators with a monopoly. Deprived of the protection of the law, competitive forces cannot operate in normal fashion on price and production.

When the state steps into the picture and provides gambling or other services banned to private producers, it places itself in a peculiar position. By offering the service itself, the state announces that the activity is not, per se, contrary to the public interest. Rather, by retaining the legal prohibition of private production, it attempts to transfer to itself the monopoly of the service. Now to the degree that this monopoly is revenue-producing, it is still profitable to the illegal operator. To the extent that the state attempts to drive the illegal

operator out of the market by competition, it must erode its own monopoly position, and hence accept substantially lower revenues.

In other words, if gambling is to be an important revenue source, the state must sustain a situation in which illegal operation is likewise profitable. If state competition is to make illegal operation unprofitable, the revenue potential of gambling likewise disappears. The state could make no more revenue from the business than it could expect to get from state grocery stores operated in competition with Safeway, the A&P, and the corner mom and pop store.

Aside from the general question of principle involved in state monopoly of gambling facilities, there is the additional question of who bears the revenue burden. Lottery and numbers games, in particular, represent monopolization of a product disproportionately consumed by low-income people. As shown above, lottery and numbers constitute a revenue source about three times as regressive as sales taxes, and pari-mutuel betting at the track is only a little less regressive than lotteries. Only revenue raised by off-track betting facilities is less regressive than sales and excises in general. It follows that, with the exception of off-track betting, state-operated gambling tends to increase the regressivity of the revenue system. This increases the burden of financing government service on those least able to bear it.

But there is another, special, consideration applicable to the particular case of the District of Columbia. The District of Columbia is unique in the proportion of its work force who commute from another state jurisdiction. It is likewise a metropolitan center for a large neighboring population residing in other states. As such a metropolitan area and center of employment, the District is required to provide services for the benefit of commuters who pay little in the way of taxes. If, as projected, about two-thirds of gambling revenue would be contributed by residents of other jurisdictions, gambling would represent a way to obtain some contribution from non-residents for the cost of services provided.

Because of these special circumstances, I think gambling has a proper place in the revenue system of the District of Columbia. The particular mixture of alternatives to be employed involves policy decisions that transcend this analysis, but I call particular attention to the possibilities of off-track betting facilities. Not only does this promise the largest projected revenue, but it is much less regressive than most taxes commonly available to state and local governments, and it tends to impose the revenue burden roughly in proportion to income.

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IMPACT OF INTRAURBAN TAX DIFFERENTIALS ON BUSINESS AND RESIDENTIAL LOCATION IN THE WASHINGTON METROPOLITAN AREA

(By Stephen S. Fuller, Associate Professor of Urban Planning, George Washington University and Joan E. Towles, City Planner, Harold F. Wise & Associates, Washington, D.C.)

I. Introduction

STATEMENT OF PROBLEM

Business and residential location decisions within the metropolitan context reflect the interplay of a variety of cost and non-cost factors whose net effect is to make location in one jurisdiction more attractive (less attractive) than location elsewhere in the metropolitan area. These location decision factors include a wide range of personal and efficiency considerations. To the extent that these decision factors can be identified and their relative significance measured, those factors which derive from public policies and actions can be manipulated in a manner which minimizes their undesirable effects on business and residential location and maximizes their positive locational consequences.

Among the publicly influenced factors affecting location decisions are the broad array of tax costs. While knowledge and information regarding the tax differentials within the Washington metropolitan area are readily available, the locational effects of aggregate taxes (property, sales, excise, income and special taxes; local and state) on new and existing businesses and residents are not known. Information which determines the locational sensitivity of businesses and residents is critical in any comprehensive assessment of alternative tax policies and programs to assure that their long term developmental effects are understood and that formulation of new tax policies are in harmony with the development objectives of the District of Columbia. To the extent that certain types of businesses and classes of residents are found to be sufficiently sensitive to their comparative tax burden that present or proposed changes in this relative tax burden will result in relocation to (or from) the District, recommendations of the D.C. Tax Revision Commission should reflect these tax effects. In this manner, these recommendations will not only constitute a comprehensive proposal for tax revision in the District of Columbia, but these revisions will also reflect a comprehensive examination of their impacts on the District as a place in which to do business and to live.

SCOPE OF INQUIRY

The study presented herein examines the location decision factors which affect initial location and subsequent relocation of businesses

and residents in the Washington metropolitan area to determine the significance of aggregate intraurban tax differentials on these location and relocation decisions. This examination assesses, for each relevant broad category of business in the WSMSA (those categories which have market characteristics which permit locational flexibility on an interjurisdictional basis), the relative importance of taxes in their location decision. This examination will distinguish between businesses relocating within the District and those selecting suburban sites.

Similarly, residents are stratified according to broad income groupings and tenure status to evaluate their comparative tax burdens and their respective locational significance. The residential location analysis is further subdivided to distinguish between households or individuals locating for the first time in the metropolitan area and those relocating within the region (moving from one jurisdiction to another; shifting from renter to owner).

These analyses will determine: (1) the primary factors affecting location and relocation of businesses and residents; (2) the relative significance of comparative aggregate tax burdens among these location (relocation) factors; (3) the locational sensitivity of existing businesses and residents to changes in comparative tax burdens; (4) the locational sensitivity of "new to the region" businesses and residents—first time locations—to existing intraurban tax differentials; and (5) the urban development implications of intraurban tax differentials in the Washington metropolitan area.

RESEARCH APPROACH

This research evolves from an examination of empirical findings of previous research on business and residential location determinants including the locational effects of taxes. This background furnishes the basis for identifying the primary factors affecting intraurban location decisions and for establishing expectations as to how these may vary among different types of businesses and categories of residents.

This material also furnishes the basis for design of questionnaires directed to specific samples of businesses and resident locating in the District and suburban jurisdictions. These questionnaires are designed to ascertain, for each survey sample, knowledge regarding intraurban tax differentials, the significance of comparative tax burdens relative to other locational factors in past and prospective location decisions, and their sensitivity to changes in comparative tax burdens. These questionnaires have been administered to a select sample, stratified according to characteristics which tend to define groups of business activities and residents with common locational criteria. A complete discussion of the survey methodology used in this study and sample questionnaires are presented in the Appendix.

STUDY FORMAT

The body of this report is divided into five chapters. The first presents a brief summary of the current literature and research on factors affecting location decision. This identifies those factors found to be significant in the location of residents and businessmen. The second

and third chapters present respectively the findings of the business and residential surveys conducted in the Washington metropolitan area among businesses and persons who have recently relocated. These chapters present the data generated by the questionnaires and furnish the basis for the analysis of location decision factors developed in Chapter IV. The final chapter examines the general policy implications of these findings and offers recommendations regarding the locational impacts of tax revision.

ACKNOWLEDGEMENTS

The authors wish to express their appreciation to the many persons who participated in their research project. Several persons deserve special mention for their assistance in defining the survey samples. These persons are: Mr. John Tydings, Assistant Executive Vice President of The Metropolitan Board of Trade, Mr. Tom Owens of Shannon and Luchs Company, and Mr. James H. Molloy, Jr. of Rufus S. Lusk and Sons, Inc. The interviewers participating in the survey included: Ms. Ava Miller, Ms. Lyndia Lowy, Mr. Buck Cole, and Mr. Stephen Meister. The general support provided by the Department of Urban and Regional Planning, The George Washington University, during this project significantly facilitated its execution. Lastly, to the staff of the D.C. Tax Revision Commission and especially its Executive Director, Dr. Robert D. Ebel, we owe many thanks for their interest, support, guidance, critical comment, and understanding throughout this project.

II. Factors Affecting Location Decisions

The theory, literature, and empirical research concerning location are extensive. Some has been successfully condensed and synthesized by several authors into readable and meaningful books[1] which will be drawn on here in order to present a simple but complete overview of the factors identified as affecting location decisions. The majority of this literature and research pertains to location of "the firm" or, more specifically, industrial location. Yet, recent research also has begun to focus on residential mobility. Here the primary concern has been on racial shifts, suburbanization, and residential satisfaction.

The purpose of this chapter is to present a theoretical and empirical context against which to assess the findings of surveys of recent business and residential location decisions in the WSMSA which constitute the primary research of this report. This literature review will present the factors cited as traditional location determinants with only limited discussion as the primary output sought is a consensus list of

[1] Melvin Greenhut, "Plant Location in Theory and Practice," (Chapel Hill, University of N.C. Press, 1956); Edgar M. Hoover, "An Introduction of Regional Economics," (New York, Alfred A. Knopt, 1971); Henry L. Hunker, "Industrial Development," (Lexington, Mass., D.C. Heath and Co., 1974); Raymon J. Struyk and Franklin J. James, "Intrametropolitan Industrial Location," (Lexington, Mass., D.C. Heath and Co., 1975); William Alonoso, "Location Theory," Regional Policy, ed. John Friedmann and William Alonoso, (Cambridge, Mass., MIT Press, 1975); William Michelson, "Environmental Choice, Human Behavior, and Residential Satisfaction," (New York, Oxford University Press, 1977); Warner Z. Hirsch, "Urban Economic Analysis," (New York, McGraw-Hill Book Company, 1973); James W. Hughes, ed. "Suburbanization Dynamics and the Future of the City," (New Brunswick, Center for Urban Research, 1974).

location decision variables which can be tested in the Washington metropolitan area.

The final section of this chapter presents the findings of a recent Census survey of "recent movers" in the WSMSA which provides: descriptive characteristics by which to compare movers with non-movers, insights regarding the origin of movers, and general reasons given for moving. These data help to illuminate the nature of the universe of recent movers in the Washington metropolitan area as well as provide a comparative base against which the residential survey sample can be measured.

CLASSICAL LOCATION THEORY

Location theory has been formulated in an attempt to explain and possibly predict the geographical distribution of economic activities. This theory can be classified as either "least-cost" or "maximum-demand" approaches.[1a] A principal proponent of the least-cost model was Alfred Weber. His formulation identified transportation costs as the critical determinant of plant location by assuming conditions of pure competition. Under his assumptions, the location having the minimum transportation costs, a net between supply of inputs and distribution of outputs, would be selected. This selection could be modified and optimized by then considering labor costs and agglomeration economies. Following this approach, transportation and labor cost differentials would identify interregional alternative locations and agglomeration economies would identify an optimum site within the intraregional framework delimited according to transportation and labor cost factors. Thus, the location determinants in this formulation are transportation costs, labor costs, and the economies or diseconomies deriving from the interrelationships among economic activities locating in proximity to each other.

In contrast to the least-cost approach which holds demand constant, demand is the dominant variable in the "maximum-demand" model. The origin of this approach is attributed to August Losch, a German economist. His formulation yields a distribution of economic activities which reflects spatial efficiency. Service areas are delineated according to population and product type. Transportation and production costs are determinants of market size but do not affect the location of producers.

Application of the principles embodied in these two approaches, combining the least-cost and maximum-demand objectives, can provide guidance regarding selection of a site having a profit maximum potential. In practice, businessmen do not apply these models in any strict sense. But research has shown that their knowledge of the market, both sources of inputs and consumption of outputs, has a major effect on selecting a region or area for location. However, within that perimeter, variations in transportation costs and quality, labor availability and productivity, utilities availability and costs, site availability and characteristics, housing quality and community amenities, financing, taxes, and local regulations all will qualify the value of site alternatives and, consequently, affect the final siting decision. Practice has identified these location parameters which, while varying

[1a] Hunker, "Industrial Development," pp. 83 ff.

in relative importance among different types of businesses, have become recognized as traditional determinants of the final location decision.

LOCATION OF THE FIRM: TRADITIONAL FACTORS

Inputs into the production process and operational costs encompass the primary factors affecting industrial and business location. In aggregate, these define the market constraints operating for a given firm. These conditions are comprised of market characteristics, material inputs, utilities, transportation and labor resources.

Market characteristics contribute to the location decision by defining the general demand structure for the product or service and the nature of business competition. The extent to which a firm is market sensitive will affect its ability to consider locations having alternative cost structures. Typically, the nature of the production process or service determines whether market factors define the location or whether the firm is locationally constrained by its sources of inputs. For those firms found locating within a metropolitan area, their market sensitivities generally predominate and their access to inputs is not a locational determinant. Firms depending on perishable inputs or inputs involving high transportation cost (relative to distribution costs for finished goods or services) have a materials-orientation in location choice and generally do not find a metropolitan location consistent with their production cost structure.

In a national context, the availability of high quality utilities at competitive costs, especially in view of increased energy prices, can differentiate among alternative locations. Yet, within a metropolitan center, the availability of power, water, gas, and sewage treatment capacity (the latter is not always considered as a utility) is only restricted in outlying portions where such services have not yet been provided and variations in quality are usually slight. For some firms, utilities may constitute a location factor, but this is normally a minor factor for most firms due to the ubiquity of utilities within an urban setting.

Transportation operates at two levels as a location determinant. For firms selecting a region in which to locate, transportation in its broadest sense constitutes a major decision factor. At this level, rates, schedules, alternative modes, and routes determine relative costs and profits. However, within a metropolitan area these potential regional variations are minimal. Yet, transportation in terms of employee access, local distribution of goods and services, parking, airport access, and access to suppliers and customers become significant qualifiers of specific sites. As the costs of local access grow with increased congestion and fuel prices, proximity to labor and customers (market sensitivity) can be expected to become more prominent in the location calculus.

Labor, its availability, cost, quality, and productivity is a primary location determinant. Here, as with transportation, these considerations have their most important effect on the interregional location decision and much lesser effect on intrametropolitan location. In most metropolitan areas, the labor market is coterminous. Thus, labor resources (availability and quality) should not vary significantly among

constituent jurisdictions. To the extent that union jurisdictions are not coterminous with the metropolitan area and the area is subject to different minimum wage rates, labor costs and productivity may vary within the region. These may constitute sufficient long run costs to make certain locations uncompetitive. This would be true for firms employing large numbers of persons at minimum wages or, in cases of union jurisdictional differences, employing large numbers of persons under such union contracts.

The above cited location factors—market and production characteristics, utility availability and quality, transportation access, and labor resources—affect interregional location to a far greater extent than intraurban location even though each operates at both macro- and micro-levels. As much of the location experience derives from industrial plants, the logic of these location factors is all but self-evident. Yet, within a region or metropolitan area once it has been selected for general location, other factors become prominent as businessmen assess alternative sites. At this scale, community issues take on importance. These issues include the institutional setting, the quality of community facilities and services, the community's image and reputation, site-specific conditions, and sociological and demographic factors. The range of these considerations extends beyond those cited above and is governed largely by the values and needs of the specific decisionmakers.

The institutional factors which appear to be important in the interjurisdictional locational context include: the quality and attitude of local government, local tax structure, and public regulations and development controls. The image that local governments portray to investors and businessmen is important in generating confidence in the community. While local governments can provide a range of inducements to prospective firms, location decisions are influenced by the actions or performance of local government which are indicative of a positive business climate. These actions are revealed in decisions to seek and support economic development, to provide the infrastructure and community environment compatible with the needs of economic expansion, and to regulate adverse effects which may detract from the positive features which characterize the community.

Taxes and their affect on intraurban business location have not been widely studied. Tax differentials derive from variation in tax structure among jurisdictions. Metropolitan areas composed of more than one jurisdiction will have some tax differences, both in rates and incidence. Where a metropolitan area also consists of portions lying in different states, these tax differentials may be substantially greater. Federal tax policy will have no location impact at the local level. The extent to which such tax differences influence location will be a function of the differences in other costs faced by the firm. If all other costs are equal among competing locations, then tax differentials can be expected to become effective in the location decision. As each jurisdiction has an array of business-type taxes whose incidence falls unevenly across the universe of firms, no strict locational guidelines relative to tax variation have been formulated. Rather, their relative locational significance can be expected to vary with the nature of the firm.

Research has shown that state tax differentials, because their absolute magnitudes are small relative to the total costs associated with

business, have had little if any real effect on business location and that local differences, while similarly of small account in the total cost framework, have been more important as local locational determinants.[2] Yet, the principal tax impact may be actually more psychological and attitudinal as certain taxes may suggest an unfavorable business climate. The absolute effect of taxes on business location is sufficiently elusive that generalizations may be misleading. It can be stated, however, that for most businesses in a metropolitan setting, while local tax differentials may exist, their relative magnitudes are small compared to other operating cost differentials, and are generally offset by market considerations.

A third institutional factor which may act to facilitate or discourage business location involves local land use regulations and development controls. To the extent that these prohibit easy location, businessmen may seek alternative sites in neighboring jurisdictions. Often within a metropolitan setting, the nature of controls varies only slightly and it is their administration which produces aggravation and delays which translate into costs which in turn may become sufficiently large to warrant consideration of alternative locations. Properly formulated and well administered land use regulations and development controls will be viewed as positive locational factors by firms seeking locations whose value will be enhanced by maintenance of high standards and compatible community development.

The general attractiveness of a community (jurisdiction) for location becomes important where market considerations permit some locational flexibility. The range and quality of a community's services and facilities, its business reputation, its housing stock, the quality and attractiveness of its physical environment, and its social climate all contribute directly and indirectly to a firm's operational efficiency and market potential. Good community facilities and services can provide support to firms in terms of their basic operational needs and also create a business environment which can attract potential customers, clients, and suppliers whose concentration may yield important agglomeration benefits to individual firms. Such services as fire and police translate directly into cost and market considerations. Public efforts to upgrade the community's physical environment by rehabilitation and renovation of buildings, redevelopment, and direct investment in public facilities can help to establish a positive business climate and community reputation as a good place to shop or conduct business. These conditions can help to extend a jurisdiction's effective market beyond its previous limits and, in doing so, can compensate for local demographic changes and increased market competition from adjacent jurisdictions.

The general quality of a community, its reputation and prestige value, can also contribute to the location decision from a less rational prospective. The personal reactions and biases of the location decision-maker have been found to play a role in the selection process. Such reactions may have little to do with the operation of the firm and much more with the personal residential or recreational needs of the decision-maker or his family. Access to a pleasant living environment together

[2] Hunker, Henry, "Industrial Development," (Lexington Books, 1974), pp. 139–141.

with proximity to his place of employment may result in a compromise decision or one which favors the place of residence rather than the strict locational needs of the firm (which in reality may be quite flexible).

Most firms do not have rigid siting requirements but most do have specific site needs. These relate directly with the operating characteristics and size of the firm and include considerations of site size and character, building style, internal layout, and amount of usable space, parking, storage, and access requirements, security provisions, and availability and expansion potentials. Normally, once a jurisdictional location decision has been made based on market and operational requirements, a search for space in the desired amount, configuration, and setting at a cost deemed competitive, is initiated. Specific site and building requirements will dictate a jurisdiction for location less frequently, as in the case of large land users, firms wanting to build rather than rent, and businesses needing rail access or Interstate Highway proximity. Such micro requirements will be relatively unique to each type of business and can be expected to vary even among similar types of business depending on the specific values of the decision-maker and the operating characteristics of the firm in question.

In addition to these traditional factors, many other less common factors exist which are derived chiefly from the nature or requirements of individual firms. These will include considerations of the interdependencies among suppliers and competitors in a given market area, association with an institution such as a university for prestige purposes even though no direct linkage may exist, the value of particular addresses within a community, and response to public pressure to locate in a particular portion of a community. Other location factors exist; how significant anyone of these are can be questioned. As primary determinants, these and many of the other factors discussed herein are probably not of major significance. As the margin, however, after basic market and operating cost factors have been assessed and found to permit flexibility in the choice of a location, then these secondary factors become important and may, in fact, dominate the location decision in the final analysis.

RESIDENTIAL LOCATION

Those factors which affect residential location are, at a minimum, just as complex as those associated with business location. They are not subject to a uniform or complete examination nor do they lend themselves to a particular methodology or perfect model of residential location. It should be noted however, that very little has actually been written on location factors; most literature has focused instead upon residential mobility and the decision to move. The scopes of studies and their conclusions have varied considerably according to jurisdiction and the time frame in which they have been undertaken. However, a review of the classical literature and recent empirical research in this area is useful in order to understand the context in which this present research is being conducted.

Traditional literature on residential locational theory relies heavily on the theories of early urban economists such as Von Thunen and

Park-Burgess.[3] Although originally developed to describe other aspects of urban form and density both sets of theories have been easily applied to residential location. The former established the foundation for current theories of land rent as a function of accessibility to the Central Business District (CBD) and transportation costs. Park and Burgess went even further to describe the organization of metropolitan housing patterns in concentric zones around the CBD with the poor in the central city and the rich in more distant zones.

Researchers in the 1960's defined the patterns of residential mobility even further by adding more emphasis to a household's budget constraints. The works of William Alonso and Richard Muth are keys in the gradual development of theories of location decision-making. Alonso hypothesized that each individual household would choose the location and quantity of housing by balancing lot size with distance from the central city. Both factors were measurements of the "utility" of a home while lot size, coupled with commuting costs, became the bottom line figure to constrain one's budget and thus, location decision. Muth's model goes one step further. Income becomes an important factor in commuting costs and "housing services," including land, structure, and size and associated amenities, not just lot size, become the base unit of consumption. In addition, Muth actually changes the basic assumption of central city commuting costs; instead, realizing the complexity of metropolitan patterns of development, jobs and their travel costs are computed from all parts of a city. In this manner, urban economists identified a theoretical framework for location decision-making, yet empirical research on actual resident desires and attitudes was sorely lacking.

It was only through surveys and housing consumer studies that the home selection process was actually described and some important locational factors were identified. Rossi, in particular, divided the residential location process into three general steps: (1) the decision to leave the old dwelling, (2) the search for the new home, and (3) the choice between alternative dwellings. This division of "movement behavior" was backed by others such as Brown, Moore, Butler, and Foote.[4]

A "push-pull" analysis was fundamental in this process whereby certain housing characteristics were identified as undesirable in a present dwelling unit and desirable in a new dwelling. Rossi noted that dissatisfaction with one's social environment and with the space and room layout were the primary reasons families sought to move. The major attractions of new homes however were, in order of importance: (1) cost considerations, (2) space factors, (3) location, and (4) neighborhood social composition. It is these pull factors—the household desires and needs—upon which one's final location decision is based. The question of whether house and neighborhood or environmental factors are inseparable parts of the location decision has always been subject to debate, however, with neither Rossi nor other researchers such as Wofe, Bell, Foley, or Stevens fully agreeing.

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[3] Hirsch, "Urban Economic Analysis," pp. 52–60.

[4] See Armiger, Louis E. and Steffens, Roger C., both of whom have written Master's theses on the subject of the residential location decision process.

Significant research more recently appeared in the works of Louis Arminger and Eric Moore. Both had subdivided the location decision-making proces and attempted to isolate even more components of the location process. Although Moore differentiated between "site" and "situational" characteristics of evaluative data, their attention focused primarily on characteristics of the new residence, the movers themselves, and the process of decision-making. Equal emphasis was not given to the factors which may have actually influenced individual search patterns throughout an urban area; that is, differentiating between the search for housing type and location of destination.

In his recent work, William Michelson examines residential location in precisely such a fashion. With extensive empirical research, he identifies factors which affected a household's search for housing and environmental choice. Push and pull factors are enumerated and compared by tenure, type of housing, sex, and relative intermetropolitan location changes. The primary reason for the choice of new residence—the pull factors—are, in the aggregate, identified as follows in order of preference: (1) unit interior size and layout, (2) neighborhood, (3) access, (4) exterior setting, (5) dwelling unit, and (6) fiscal considerations.[5] This recent work is probably the most thorough analysis of factors affecting residential location decision-making to date.

Summarizing the literature discussed herein, a complete disaggregation of mobility rationale, comprising a list of relevant locational factors, is identified to include the following categories of residential location values: accessibility to transportation services, proximity to employment, commercial facilities, and public facilities and services, the physical characteristics of the neighborhood, individual site conditions, the social environment and its accessibility, the individual housing unit, and housing cost considerations including financial package or rent, operating costs, and investment value.

SUMMARY: FACTORS AFFECTING BUSINESS AND RESIDENTIAL LOCATION

The literature has identified a broad range of factors which contribute to the location decisions of businessmen and residents. The diversity of these factors illustrates the complexity and individualized nature of the location decision process. However, within this process, some consensus is identifiable. Without implying any priority or ranking among factors, the following are identified as constituting the basic factors influencing the location decisions of businessmen and individuals seeking a place to reside (purchase or rent).

Business location factors

The prominently mentioned factors involved in the location of a business: labor force conditions, infrastructure quality and availability, the quality and range of community facilities and services, transportation services and costs, local economic structure and market characteristics, institutional framework (government, taxes, regulations), neighborhood environment, and physiographic and land use conditions (site considerations). These factors are generally considered in some combination as there are interdependencies among

[5] Michelson, "Environmental Choice," p. 122.

them relative to individual businesses. While one major factor may be the principal determinant in selecting one jurisdiction from among several, it is likely that the final site decision will reflect a composite or mix of these locational factors.

Residential location factors

The factors found to be primary determinants of residential location include: proximity to place of work, quality of public facilities and services, community reputation and image, economic considerations (cost of housing including taxes, property values, cost of living), housing conditions, neighborhood amenities, general access (to services, shopping, cultural activities), and jurisdictional familiarity. For the individual making a housing choice, many of these factors are qualitative and therefore objectivity in the decision process may be more elusive than in the business location decision. Those factors appearing to be significant at the jurisdictional choice level are often dominated by what may be best described as psychic and personal values and circumstances. These may or may not have a definable or factual basis. These factors are often not fully apparent to the decision-maker such as a subconscious resistance to living in an area because it is known or purported to be liberal, conservative, progressive, backwards, "red-neck," part of the Confederacy, etc. However, irrespective of what factors contribute to a jurisdictional location, selection of a particular location within that community apparently follows a more conscious and disciplined process, one which is more rigorous for home-buyers than for renters. As for the businessmen, the resident making a location choice interjects his personal values and expectations into the selection process and consequently, each decision-maker will evaluate these location factors (and probably others) in his own way. The final choice will reflect some logic in the consideration of cost, convenience, safety, value, and specific needs. The method by which these factors and those more personal or psychic factors are synthesized is not clear from the literature and research in the field.

III. Recent Movers in the Washington Metropolitan Area

Some of the most elusive socio-economic data are those describing intra- and inter-urban migration. The 1970 U.S. Census provides some demographic data regarding persons who resided at a different address in 1965 than in 1970 at the time the Census was taken. These data include age, sex, education, employment, and income by jurisdiction of 1970 residence but do not indicate the jurisdiction of former residence nor the reasons for relocation.

The Annual Housing Survey conducted in 1974 by the U.S. Census in the Washington SMSA provides the most recent data on "recent movers" but does so only for the central city (District of Columbia) and the remainder of the SMSA. These data focus on the housing conditions of recent movers and include only those socio-economic characteristics pertinent to housing, e.g., income and household composition. However, this Census does provide information regarding the previous location of recent movers and the general reason for their move. The magnitude and general characteristics of recent

movers in the WSMSA are presented here in the following table in order to determine the extent to which recent movers in the central city (District of Columbia) differ from recent movers locating outside the central city (the suburban jurisdictions).

GENERAL CHARACTERISTICS OF MOVERS AND TOTAL HOUSEHOLDS BY TENURE, WSMSA, 1974

	Total		District of Columbia		Remainder SMSA	
	All households	Movers	All households	Movers	All households	Movers
All occupied housing units	981,000	205,300	257,800	41,200	723,000	164,100
Percent recent movers		100.0		20.1		79.9
Percent all households	100.0		26.3		73.7	
Percent owners	48.8	22.8	30.1	9.0	55.5	26.3
Percent renters	51.2	77.7	69.9	91.0	44.5	73.7
Movers as a percent of all households by jurisdiction		20.9		16.0		22.7
Owners		9.8		4.8		10.7
Renters		31.6		20.8		37.6
Household composition—Owner:						
2 or more persons	90.9	91.0	82.1	75.7	92.5	92.3
1 person households	9.1	9.0	17.9	24.3	7.5	7.7
With children under 18	52.3	59.2	32.2	37.8	56.2	61.0
Household composition—Renter:						
2 or more persons	66.2	71.0	57.2	54.9	71.3	76.0
1 person households	33.8	29.0	42.8	45.1	28.7	24.0
With children under 18	33.3	34.9	27.9	25.6	36.3	37.8

Source: U.S. Census, "Current Housing Reports, Series H-170-74-18, Washington, D.C., Maryland-Virginia, SMSA, Annual Housing Survey: 1974, Housing Characteristics for Selected Metropolitan Areas," U.S. Government Printing Office, Washington, D.C., 1976.

General characteristics of recent movers

Recent movers are defined as persons (heads of households before and after the move) who have changed their place of residence within the twelve month period preceding the 1974 survey. For the Washington metropolitan area, there were 205,300 households which relocated within this twelve month period. This number represents approximately 21 percent of the SMSA's total households. Stated another way, approximately one-fifth of the households in the WSMSA at the time of the 1974 survey had changed their place of residence during the preceding year. Of these total recent movers, 20.1 percent resided in the District of Columbia and 79.9 percent resided elsewhere in the metropolitan area. Compared to the distribution of all households in the SMSA, recent movers showed a stronger tendency to locate outside of the District (79.9 percent of recent movers outside D.C. vs. 73.7 percent of all households outside D.C.).

The tenure characteristics of recent movers highlight the mobility differences between owners and renters with renter households comprising 77.7 percent of total movers. This compares to the 51.2 percent which renter households represent of the SMSA's total households. The distribution of owner and renter households between the central city and non-central city jurisdictions demonstrates the transient nature of the D.C. population. Of recent movers in the District, 91 percent were renter households compared to its overall renter proportion of about 70 percent.

Household composition among recent movers who are owners is similar to that of the total households but renter movers are more likely to have children under the age of 18. Renter households who are recent

movers are larger than those comprising the total. Substantial variation in household composition is revealed when the totals are disaggregated by central city (District of Columbia) and non-central city for both owners and renters.

Income distribution

The income distribution of households, total and recent movers by tenure and location are shown on the following table. These distributions for owners indicate that recent movers have higher incomes than the all household average irrespective of location. Recent owner movers with incomes above $10,000 comprise about the same proportion in the District (89.2 percent) as they do in the suburbs (88.3 percent) although these movers to the suburbs have a greater proportion in the upper income levels ($15,000+) than does the District. For renters, recent movers have a lower income distribution than the total owner households in each location but those recent movers choosing a non-central city location had a substantially higher income than those residing in the District.

Origin of recent movers

The origin of recent movers compared to their current place of residence is shown on the table on page 158, provides insights regarding where those persons come from who are recent movers. These data confirm that these recent movers consist primarily of intrametropolitan relocations. Of all the recent movers in the WSMSA, 77.2 percent already resided in the WSMSA, with 17.4 percent having moved to the Washington metropolitan area from another metropolitan area, and with the remaining 5.3 percent moving in from a non-metropolitan area.

INCOME DISTRIBUTION OF RECENT MOVERS AND ALL HOUSEHOLDS BY TENURE, WSMSA, 1974

	Total		District of Columbia		Remainder SMSA	
	All households	Movers	All households	Movers	All households	Movers
Owner occupied	479,000	46,800	77,700	3,700	401,300	43,100
Less than $3,000	2.7	1.1	5.9	5.4	2.1	0.7
$3,000 to $4,999	2.5	0.6	5.3	1.3	1.9	0.5
$5,000 to $6,999	2.9	1.1	6.8	1.3	2.2	1.2
$7,000 to $9,999	5.0	4.3	9.3	2.7	4.2	4.4
$10,000 to $14,999	13.7	15.6	18.9	18.9	12.7	15.3
$15,000 or more	73.1	77.3	53.9	70.3	76.8	78.0
Renter occupied	501,900	158,500	180,000	37,500	321,900	121,000
Less than $3,000	7.8	7.0	12.3	10.7	5.2	5.9
$3,000 to $4,999	8.2	7.6	11.6	10.1	6.3	6.8
$5,000 to $6,999	9.7	10.0	12.9	14.1	7.8	8.7
$7,000 to $9,999	17.3	19.0	19.7	23.5	16.0	17.6
$10,000 to $14,999	25.6	27.1	21.9	21.3	27.6	28.8
$15,000 or more	31.5	29.4	21.6	20.3	37.0	32.3

Source: U.S. Census, "Current Housing Reports, Series H-170-74-18, Washington, D.C., Maryland, Virginia, SMSA, Annual Housing Survey: 1974, Housing Characteristics for Selected Metropolitan Areas," U.S. Government Printing Office, Washington, D.C., 1976.

Recent movers residing in the District are even more likely to have moved from within the metropolitan area (85 percent) compared to the total. Central city movers are also likely to originate from the central city. Of the District's recent movers, 82.5 percent have previously lived in a central city, with only 14.9 percent moving in from

suburban locations. Most of the District's recent movers from the WSMSA (85 percent) were residents of the District with the remainder representing moves into the District from the suburbs. The owner and renter profiles show the same trends. The District provides the major source of owner and renter recent movers to the District; these recent movers constituting internal relocations within the District.

Eight and one-half (8.5) percent or 13,948 of the recent movers locating outside the District were previous District residents where 11.6 percent or 4,779 of the recent movers to the District previously resided in the suburban jurisdictions. The origin of these suburban recent movers is primarily other local suburban jurisdictions. This is particularly true of owners who are recent movers. Persons moving into the WSMSA from non-metropolitan areas are approximately 2.5 times as likely to locate in a non-central city location as one in the District. Thus, of all recent movers to the Washington suburban jurisdictions, 81.9 percent have come from non-central city locations, 8.5 percent from the District, and 9.6 percent from the central city of another SMSA. In both the District and in the suburban jurisdictions recent movers, irrespective of their tenure, are composed chiefly of persons relocating within the same area (central city/non-central city). In addition to those intrajurisdictional moves, the central city appears to attract movers from other central cities while non-central city jurisdictions attract movers from other non-central cities and non-metropolitan areas. The non-central city also attracts a large number of former central city residents (18.1 percent) compared to the magnitude of non-central city movers into the central city (14.9 percent).

LOCATION OF PRESENT UNIT BY TENURE AND LOCATION OF PREVIOUS UNIT, 1974

[Percent distribution]

Previous unit, location, same head in present and previous unit	Present unit, tenure and location in WSMSA								
	All occupied			Owner occupied			Renter occupied		
	Total	In District of Columbia	Remainder SMSA	Total	In District of Columbia	Remainder SMSA	Total	In District of Columbia	Remainder SMSA
Inside WSMSA	77.2	85.0	75.5	81.0	89.3	80.4	75.7	84.9	73.0
In District of Columbia (central city)	20.0	73.4	8.5	11.5	71.4	6.9	23.6	74.1	9.2
In remainder SMSA	57.2	11.6	67.0	69.5	17.9	73.5	51.1	10.8	63.8
Inside different SMSA	17.4	12.4	18.5	14.9	10.7	15.5	18.5	12.7	20.1
In central city	9.5	9.1	9.6	6.4	7.1	6.4	10.9	9.4	11.3
In remainder SMSA	7.9	3.3	8.9	8.5	3.6	9.1	7.6	3.3	8.8
Outside any SMSA	5.3	2.5	6.0	4.1	--------	4.1	5.8	2.4	6.8
Same State	.8	--------	1.0	.2	--------	.3	1.0	--------	1.3
Different State	4.5	2.5	5.0	3.6	--------	3.8	4.8	2.4	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U.S. Census, Current Housing Reports, Series H-170-74-18, Washington, D.C., Maryland, Virginia, SMSA, Annual Housing Survey: 1974, Housing Characteristics for Selected Metropolitan Areas, U.S. Government Printing Office, Washington, D.C., 1976.

Reason for moving

Some insight regarding the reasons for moving which motivated recent movers to relocate in the Washington metropolitan area can be gained from the data furnished in the Annual Housing Survey. These data are summarized on the table on page 30. For those recent movers

(where the household had the same head in both locations), the principal reason for moving had to do with "housing needs" of the household. The Census defines these needs as including cost, tenure, and neighborhood considerations. This reason accounted for 40.6 percent of the total recent movers' decisions to relocate. In the District, this reason constituted an even larger proportion (45.2 percent) of the reasons identified. The second housing related reason, "family status," accounted for approximately one-fourth of the reasons given. This reason is defined to include both some locational considerations (proximity to relatives) and changes in physical housing needs (newly married, increase in family size). These two reasons, "housing needs" and "family status" comprise 64.9 percent of the reasons given for moving overall but amount to 71.4 percent in the District. In the suburban jurisdictions these reasons represented only 63.5 percent of the causes of relocation.

RECENT MOVERS,[1] WSMSA–1974, MAIN REASON FOR MOVE INTO PRESENT UNIT

[Percent distribution]

Reasons for move	Total	District of Columbia	Remainder SMSA
Units occupied by recent movers [2]	134,800	24,100	110,700
Job-related reasons [3]	26.1	16.2	28.3
Family status [4]	24.3	26.2	23.9
Housing needs [5]	40.6	45.2	39.6
Other reasons [6]	8.8	12.0	8.0
Reason not reported	.2	.4	.2

[1] Households who moved into present units within 12 mo prior to survey.
[2] Restricted to units with same head in present and previous units.
[3] Reasons such as job transfer, new job, retirement, commuting reasons.
[4] Reasons such as newly married, family increased in size, moved closer to relatives.
[5] Reasons such as wanted his own residence, wanted a less expensive house, didn't like his old neighborhood.
[6] Other than above reasons.

Source: U.S. Census, Current Housing Reports, Series H–170–74–18, Washington, D.C., Maryland, Virginia, SMSA, Annual Housing Survey: 1974, Housing Characteristics for Selected Metropolitan Areas, U.S. Government Printing Office, Washington, D.C., 1976.

The third category of reasons for moving, "job related," exhibit the greatest variation between central city and non-central city recent movers. In the District only 16.2 percent of recent movers identified this reason, while 28.3 percent of the recent movers in the remainder of the WSMSA cited this reason.

While the specificity of reasons enumerated in the survey do not permit rigorous analysis, some conclusions can be noted. Neighborhood, family, and cost factors constitute the primary reasons for moving with housing unit factors also being important. Together, external housing factors and those tied directly to the adequacy of the unit seem to account for approximately two-thirds of the reasons for recent moves and these are more important to central city movers than non-central city movers. In contrast, job related reasons appear to constitute a significant reason in the suburban jurisdictions, more important than "family status," where the District, "job related" reasons are of much lesser relative significance.

IV. Business Location Factors in the Washington Metropolitan Area

SAMPLE CHARACTERISTICS

The survey sample for businesses locating or relocating within the Washington metropolitan area was comprised of 56 firms: 21 located in the District of Columbia; 24 located in the suburban Maryland jurisdictions; and 11 located in the Northern Virginia suburbs. With the exception of two firms, all of those surveyed had moved to their current address during the past three years. These firms included a full range of employment sizes: 25 percent had a full-time labor force under 10 employees; 43 percent had a full-time labor force in the range of 10 to 75 employees; and 32 percent had more than 75 full-time employees. The smallest firm had 2 employees; the largest reported in excess of 1,000 full-time employees. The sample also represented a broad range of business activities: retail—11 percent, finance, insurance, and real estate—7 percent, business services—30 percent, professional—9 percent, manufacturing—8 percent, non-profit associations—18 percent, wholesale—4 percent, restaurants—4 percent, and central office/headquarters—9 percent.

The twenty-one businesses surveyed which were located in the District of Columbia differed slightly in their mix and size characteristics. These were distributed as follows: retail—10 percent, finance, insurance and real estate—10 percent, business services—14 percent, professional—10 percent, manufacturing—0 percent, non-profit associations—47 percent, wholesale—0 percent, restaurants—10 percent, and central office/headquarters—0 percent.[6] The D.C. sample represented a balanced distribution of firms by full-time labor force size although they show a slightly greater proportion of small firms (38 percent) and a smaller proportion of large firms (19 percent) than the total sample. The percentage of medium size firms (43 percent) was identical to that in the total sample.

PREVIOUS BUSINESS LOCATIONS

The firms in the sample included eighteen (18) businesses which had moved into the metropolitan area shifting from another location. These represented 32 percent of the sample. In addition, there were eighteen (18) firms (32 percent) whose previous location was in the District. Twenty percent (20 percent) of the sample (11) had previously located in the suburban Maryland jurisdictions and five (5) firms (9 percent) had Northern Virginia as their previous location. Four (4) firms were start-ups, new firms whose location was their first.

The source of the District's business sample reveals significant differences from the total sample. Sixty-seven percent of the firms locating in the District were new to the region firms, established firms locating in the metropolitan area for the first time. Thus, the District acquired fourteen (14) of the eighteen (18) total cases of such locations. In contrast, none of the District's business locations

[6] FNMA was classified under finance, insurance, and real estate even though it is an administrative headquarters as the other cases in this category are central offices for a chain of local or nation serving establishments.

were previously located in the suburban jurisdictions, either in Maryland or Virginia. The remainder of the District's sample were relocations within the District (5 firms, 24 percent) or start-ups, new firms being established for the first time (2 firms, 10 percent).

Comparing this distribution to the total, indicates that the District enjoyed a net gain of three (3) firms as a consequence of these relocations within the sample: the District was the origin of eighteen (18) firms and the destination for twenty-one (21). Yet, of those twenty-one (21) only five (5) were firms having previously been located in the District. Since no previously located suburban firms in the sample moved into the District and the District gained fourteen (14) new to the region firms and two (2) start-ups, it therefore only retained five (5) of its original eighteen (18) firms. The loss of thirteen (13) previously D.C. located firms to the suburbs added to the sixteen (16) previously located suburban firms which relocated within the suburban portion of the metropolitan area, plus two (2) start-ups and four (4) new to the region firms, amounted to a total of thirty-five (35) non-District firms. This constitutes a net gain for the suburban jurisdiction of nineteen (19) businesses with much of this gain (68 percent) being at the expense of the District.

FACTORS AFFECTING BUSINESS LOCATION

In order to identify the nature of the business location process, firms were asked what factors influenced their selection of the jurisdiction in which they located from among the many jurisdictions comprising the metropolitan area. These firms were then asked whether or not they seriously considered sites in other jurisdictions. This question was intended to reveal the extent of search conducted in the process of site identification. Then each firm was asked to list those factors which were considered in the site location selection process within the identified jurisdiction. Obviously, for some firms, the selection process is not a definitive two stage decision and the selection factors merge into one single decision. Yet, the responses made by those firms in the sample seemed to fall into relatively distinct categories, some of which had clear interjurisdictional location implications while others would be operative only in a localized setting.

Range of Locations Considered

The discipline exercised by many firms in the location decision process is revealed in the large proportion (59 percent) of the sample that seriously considered locations in more than one jurisdiction. These firms, it can be assumed, were comparison shopping, seeking a location which fit their particular market and operating needs at least cost. This range of search may also imply that there are real market and cost differentials in the metropolitan area by which firms are distributing themselves. Sixteen percent (16 percent) of the sample seriously considered alternative locations within the jurisdiction in which they were previously located and 7 percent limited their search to the immediate neighborhood of their previous location. Lastly, ten (10) firms, 18 percent of the sample, did not seriously examine alternative locations. These firms found the location that met their needs without conducting a comparative search.

In contrast to the 41 percent of the total sample which confined their search to a single jurisdiction, 62 percent of the District's sample did not seriously consider non-District locations. This would imply that the factors considered by firms locating in the District are quite persuasive.

Factors Influencing Jurisdictional Selection

Businesses in the survey sample were asked to identify the factors they considered in selecting the jurisdiction in which they located. These considerations were classified and grouped into six reasonably discrete categories: tax advantages, market factors, operating costs, transportation factors, institutional factors, and the residential distribution of employees. These categories are defined as follows:

Tax advantages.—This grouping includes firms citing a favorable or unfavorable tax structure or displeasure with a particular tax relative to their type of business as a locational consideration.

Market factors.—This category includes consideration of local and non-local proximity or access to clients and customers. This includes the need to be close to Federal agencies, the results of market studies, and visual access as a business generator.

Operating costs.—The cost included in this classification were access to labor, cost of labor, agglomeration economies, the "nature of business," the financial package available, relationship to its local outlets and suppliers, and need to consolidate dispersed activities.

Transportation factors.—While the market and operating considerations identified above include transportation costs, this grouping reflects the stated need for particular transportation services, such as a rail spur or easy access to an Interstate Highway. These transportation factors are generally those having real or imagined interjurisdictional differentials.

Institutional factors.—This classification comprises a broad range of generally government related concerns. These include local government attitudes and actions in support of business location, public regulations, incentives, and local tax policies. These factors and other less tangible factors shape the community's business reputation and the business value of its address. Other factors included under this category are prestige and community amenities.

Residential distribution of employees.—This factor reflects the desire of firms to be accessible to their labor force. For a firm relocating within the metropolitan area, a new location which among meeting other requirements is also favorably situated relative to its current employees is more attractive than one which is inconvenient. This is particularly evident among firms relocating in a suburban location. A variation of this factor, one which is more restrictive, ties the location to proximity with the manager's or owner's residential location.

The table on page 163 arrays the distribution of responses to questions regarding the selection of jurisdictional locations. For the full sample, market factors and operating costs, closely followed by transportation and institutional factors seem to be relatively common among the respondents as locational determinants at the interjurisdictional level. The least frequently cited of these factors was interjurisdictional tax differentials (tax advantages).

The District's sample of recent business locations deviates substantially from the distribution for the total sample. Market factors, cited by 90 percent of the respondents locating within the District, is clearly the single most important distinguishing locational factor. This is followed by institutional factors which was cited by 48 percent of the respondents. In relative terms, the remaining factors were not of great importance overall. Institutional factors in the District reflected much more strongly on the prestige value of the address, the need to be in the District because it is the "Capital" and traditional or historical (psychic) reasons than on the support of local government and its assistance in relocation. These latter factors were commonly cited among firms locating in suburban jurisdictions, especially in Prince Georges County.

Factors Influencing Neighborhood Selection

The process by which a business identifies a specific site once having chosen a jurisdiction reflects a different set of concerns. These relate to the special needs of the firm. Based on the literature in the field and the responses of those firms surveyed, five (5) categories of neighborhood location factors were defined. These are as follows:

FACTORS AFFECTING JURISDICTIONAL SELECTION BY BUSINESS ACTIVITIES

[Frequency cited, percent]

Factor categories	Total sample	District sample
Tax advantages	14	10
Market factors	50	90
Operating costs	45	19
Transportation factors	41	19
Institutional factors	41	48
Residential distribution of employees	28	10
FACTORS AFFECTING NEIGHBORHOOD SELECTION BY BUSINESS ACTIVITIES		
Proximity to suppliers	4	0
Neighborhood quality	29	38
Building characteristics	84	81
Access and parking	59	62
Economic factors	44	38

Proximity to suppliers.—This category was included to reflect possible localized relationships between businesses and their suppliers; relationships not having interjurisdictional implications.

Neighborhood quality.—This grouping reflects a range of factors which qualify a particular site area. These relate to the adjacent geographic area surrounding the site or building and include the quality of local public and private services, the compatibility of contiguous business and other nearby activities, the image of the immediate area as a good place to conduct business ("where the action is"), safety, aesthetics, density of development, and so on. These are factors which may not have direct cost effects but contribute significantly to market definition and potential, and the effectiveness with which the business operates within its market.

Building characteristics.—This group comprises those factors relating directly to the space which the business is to occupy and its immedi-

ate site. It includes the amount, quality, and type of space (horizontal, highrise, owned, rented, individual building, etc.) and the associated site and ancillary requirements (loading space, storage, on-site parking, etc.).

Access and parking.—This category of location factors describes the direct and localized access requirements of the firm. These considerations include: congestion, parking difficulties for customers, access to public transportation including Metro, and access to restaurants, services, and hotels. This level of access has both market and operating cost implications and reflects intrajurisdiction variations.

Economic factors.—The economic location factors are restricted to those relating to the cost of the space, (i.e., rental or financing packages) and its value and availability. This category excludes market, access, or operating costs as these have been accounted for elsewhere.

The survey sample, both the total and that for the District only, agree on the importance of the building and space characteristics in the site (neighborhood) location decision. As shown in the preceding table, 84 percent of the total business sample and 81 percent of the District's sample cited building characteristics among their primary neighborhood location factors. Of secondary importance in both samples (total and District) was access and parking cited respectively by 59 percent and 62 percent of the businesses surveyed. Economic factors followed by neighborhood quality were also frequently mentioned. The order of frequency (relative importance) among these factors was the same for both the total and District's samples, although there were some modest differences in the magnitudes of these frequencies.

Taxes as a Location Factor

Only eight (8) firms (15 percent) in the total survey sample (2 in the District sample) voluntarily identified taxes as a location consideration. Of those firms who stated that they consciously considered taxes in the location decision process only one (1) firm stated that tax differentials were a primary consideration, three (3) firms stated that taxes were of secondary importance, and the other four (4) firms said that taxes were considered only slightly or had only a minor affect in the decision process.

Those forty-eight (48) firms not citing taxes as a locational consideration were asked whether, in retrospect, tax considerations were in fact a location factor. Thirty-four (34) of these firms reaffirmed their position that tax advantages (disadvantages) were not considered as part of the location decision process. Only fourteen (14) firms admitted, that while not at first acknowledging taxes as a factor in the location decision, they were considered. Of those fourteen (14) firms only one (1) firm stated that it was a primary factor. Nine (9) of these firms said that while they considered tax issues, these figured only slightly in their final location decision. The remaining four (4) firms stated that taxes were of second importance.

Taxes were even less prominent among those firms locating in the District. Two (2) firms (out of 21) directly acknowledged taxes as among their location considerations, but neither stated this factor was of primary importance. Of the nineteen (19) firms not directly acknowledging taxes as a location factor, fifteen (15) reaffirmed their

position that taxes had not been among the factors they considered in selecting the District for location. Three (3) firms stated that taxes were slightly considered and one (1) stated that taxes were of secondary importance.

Interjurisdictional Tax Differences: Do They Exist?

To test the knowledge of these businesses regarding tax differences within the metropolitan area, all firms in the sample were asked whether they thought that tax differentials existed. Fifty percent said yes, 16 percent stated no, and 34 percent said that they did not know. Of the firms locating (relocating) in the District, 43 percent said that they did not know whether there were tax differentials among the area's jurisdictions and 19 percent said that they did not think there were any differences. The remainder, 38 percent, stated that there were local tax differentials.

Tax Sensitivity

To evaluate the potential impact of changes in local taxes on business relocation, firms were asked whether they would consider moving to another jurisdiction if their relative tax burdens became more unfavorable. In the total sample, 30 percent of the firms said yes that they would consider relocation if their relative tax burdens increased; 13 percent stated that they did not know how they might respond to an increase in relative tax burdens; and 57 percent said they would not be induced to relocate only by an increase in relative tax burdens. In the District's sample, 43 percent said yes, 48 percent said no, and 9 percent were unsure. These responses suggest that businesses locating in the District are more sensitive to changes in tax burdens and also that they may be more flexible in their locational choice.

To determine which type of tax seemed to be more offensive to businesses locating or relocating in the metropolitan area and the District of Columbia, each participant in the survey was asked to single out the one tax which most affected their business and which might influence their decision to relocate. The responses to this question are listed below.

TAX WHICH MOSTS AFFECTS BUSINESSES SURVEYED

[In percent]

Type of tax	Total sample	District sample
None identified	20	24.0
Income	12	14.0
Real Property	29	9.5
Gross Receipts	2	0
Inventory	2	0
Sales	11	14.0
Payroll	7	9.5
Franchise	5	9.5
Parking	4	9.5
Total Tax Burden	9	9.5

Note: Total does not add up to 100 percent due to rounding.

The differences in business tax structure and incidence within the metropolitan area and the varying degrees of tax sensitivity among the firms in the survey sample are revealed in this table by the range of types of taxes identified as being of primary concern to respon-

dents. No single tax was overwhelmingly chosen by these businesses. Of the total sample, property taxes were the most frequently cited accounting for 29 percent of the responses. Income and sales taxes were the other two types which elicited some degree of agreement among respondents with 12 percent and 11 percent respectively of the responses. A relatively large share of the respondents, 20 percent, were not sure. Some of this uncertainty was undoubtedly due to the fact that many of the firms surveyed were new to the region and had not been here sufficiently long to know their real tax burdens.

Even more uncertainty seems to exist within the District sample with 24 percent stating they did not know which tax most affected their business. This uncertainty exists for the reason cited above; that a large proportion of the sample were new to the region firms having been operational for only a brief period. The remainder of the District's sample were distributed relatively evenly among seven tax categories.

V. Residential Location Factors in the Washington Metropolitan Area

In order to identify the factors which recent movers in the Washington metropolitan area cite as influencing their choice of jurisdiction and neighborhood and to evaluate the relative significance of intra-urban tax differentials among these residential location determinants, 200 households were interviewed. These 200 households were evenly divided between owners and renters. Those two groups were also evenly divided by place of current residence with one-half living in the District of Columbia and one-half residing elsewhere within the metropolitan area with this latter one-half divided evenly between the suburban Maryland and Virginia jurisdictions. The sample was selected to include households moving to their current address since 1974. A detailed discussion of the survey method is presented in the Appendix of this report. The following sections will present the findings of this survey.

Recent Movers: Previous Place of Residence and Tenure

The table below reports where the survey sample resided prior to moving to their current address. For the owners surveyed, those previously residing in the Washington metropolitan area are divided almost evenly between the central and non-central city portions, in proportion to the survey sample, although within the non-central city portion, the distribution is slightly skewed. Among the renters, not only were a substantially larger proportion from outside the metropolitan area compared to the origin of current owners, but a greater share of these movers were District residents.

PREVIOUS PLACE OF RESIDENCE OF RECENT MOVERS BY TENURE, TOTAL SAMPLE AND DISTRICT OF COLUMBIA

[In percent]

Place of previous residence	Total owners	Total renters	District of Columbia owners	District of Columbia renters
New to the region	19	28	20	22
District of Columbia	41	38	70	61
Reminder WSMSA	40	34	10	14
Maryland suburbs	19	22	2	8
Virginia suburbs	21	12	8	6

Most of the persons surveyed had been previous renters. Of the owners, two-thirds (67 percent) had moved from a rental unit while, of the renters surveyed, 75 percent had been previous renters and only 7 percent were previous owners. The remainder were new household formations.

The income distribution of survey respondents, while not controlled in the sample design, does reflect a representative range with income of owners being dominated by higher categories than those of renters as would be anticipated. For owners surveyed, 59 percent had incomes above $25,000, 33 percent had incomes between $10,000 and $25,000, and 3 percent had incomes below $10,000. For renters surveyed, 14 percent had incomes exceeding $25,000, 58 percent were in the $10,000 to $25,000 range, and 28 percent had incomes below $10,000.

Recent movers who located in the region from outside, new to the region residents, were distributed among the area's jurisdictions somewhat differently than the total sample with the District receiving 53 percent of the owners but only 41 percent of the renters. Of the new to the region movers locating outside of the District, a disproportionate share settled in the Virginia portion of the region (37 percent of the owners and 44 percent of the renters). The income structure of the new to the region movers had a greater number of household with incomes above $25,000 and below $10,000 (both owners and renters) than is true for the total sample.

An examination of only those recent movers now residing in the District, as shown in the table above, illustrates the degree to which these movers represent internal relocations of persons already living in the District. Of the owner sample, only one (1) moved from the suburban Maryland portion of the metropolitan area into the District. Similarly, the Northern Virginia portion of the region accounted for only four (4) movers, including none from Fairfax County. The renter movers show a similar flow. Almost two-thirds of these moves were relocations of previous District residents and less than one-sixth were renters moving into the District from a suburban jurisdiction. Owner incomes of District movers have a distribution very similar to the total sample, but incomes of renter movers to the District were lower than those of the total sample. A more detailed discussion of income differentials appears in Appendix B.

FACTORS AFFECTING RESIDENTIAL LOCATION

In order to determine the nature of the residential location decision, the survey queried the respondents regarding: whether they considered other locations before selecting the residence they now inhabit; what factors they considered in selecting the jurisdiction in which they now reside; and what factors were considered in selecting the specific location within that jurisdiction. The responses to the questions regarding factors considered in selecting one jurisdiction over others and then the specific location in a given community were categorized into groups reflecting functional commonalities. While the responses to these questions involved a broad range of reactions, they were easily grouped into five categories for each of the two questions.

Consideration of Alternative Locations

The extent to which recent movers being surveyed participated in the location process is an important qualification to the logic of the residential location decision. Respondents were asked whether, during the selection process, they had seriously considered houses (apartments) other than the one which they currently occupied. Approximately one-third (32 percent owners and 36 percent renters) of the respondents said no. In effect, they did not seriously shop around comparing price, amenities, and access characteristics among the jurisdictions in the metropolitan area. A few respondents confined their search to the neighborhood of their final choice: 6 percent owners; 9 percent renters. The largest group confined their search within the jurisdiction of final residence: 39 percent owners; 32 percent renters. Only 23 percent of the owners and renters conducted their housing search over more than one jurisdiction, some considering housing opportunities in all three state-portions of the WSMSA. The fact that 77 percent of the respondents (the same for owners and renters) did not search beyond the boundaries of the jurisdiction in which they finally settled suggests that the factors by which one selects the jurisdiction of search must be quite persuasive. These factors are examined in the following section.

New to the region movers exhibited slightly more uncertainty in selecting a jurisdiction in which to seek their housing. Of the new to the region owners, 37 percent seriously considered housing in more than one jurisdiction before making a final choice. For new to the region renters, one-third (33 percent) searched beyond the jurisdiction of their final choice before making that location decision. However, recent movers locating in the District were least likely to consider other jurisdictions as possible places of residence. Of the renters, 48 percent considered no other location than the one they currently occupy and only 20 percent seriously examined locations outside of the District. For owners, only 18 percent seriously considered housing outside of the District while 48 percent either did not consider any other unit or confined their search to the neighborhood in which they finally located.

Factors Influencing Jurisdictional Selection

Five categories of decision factors were identified based on the literature and research regarding residential mobility, the responses of those persons surveyed, and the needs of this study. These are: tax advantages, community image and reputation, family or friends are

current residents or respondent previously lived there, proximity to job, and non-tax economic factors.

Tax advantages.—This factor reflects decisions to select a jurisdiction of residence based on knowledge of tax burden differentials within the metropolitan area where the respondent believes tax costs in other jurisdictions to be higher than in the one he selected.

Community image and reputation.—This category encompasses a range of qualitative conditions which combine in the view of the decision-maker to distinguish one jurisdiction as a "good place to live." These factors included considerations of safety, amenities, public facilities and services, life styles, and environmental conditions.

Family or friends are current residents or respondent previously lived there.—This category is self-explanatory. Many general location decisions are made based on knowledge gained from friends. Similarly, familiarity with a particular jurisdiction—"I grew up there"—is a significant location determinant. Wanting to live near one's parents or relatives has the same relative importance. These considerations combine to represent foreknowledge of a community with such familiarity diminishing the significance of other factors.

Proximity to job.—Living in or near the jurisdiction in which the respondent is employed is a matter of general convenience and communtation cost savings. While not traditionally a major location determinant in a metropolitan area where mobility has been historically relatively inexpensive, increasing transportation costs and highway congestion will increase the relative importance of this factor in the future.

Nontax economic factors.—This category includes a range of considerations which reflect perceived investment value in terms of housing resale, cost of living differentials, job related considerations (resident manager, local public employee), and financing arrangements.

The survey, shown on page 53, shows for both owners and renters, that proximity to job is the most significant factor reported in jurisdictional selection, cited twice as often as the next factor, previous familiarity—family, friend, or previous resident. Community reputation was mentioned by 25 percent of the owners and 19 percent of the renters. Nontax economic factors was the fourth most frequently cited factor. Tax advantages ranked last; identified by 8 percent of the owners and 2 percent of the renters. This difference in response frequency between owners and renters is probably attributable to the tax benefits which accrue to the owner on his Federal income tax return which do not accrue to the renter. It is noteworthy that the priorities and general magnitudes of response frequencies do not vary substantially between owners and renters.

FACTORS CITED IN JURISDICTIONAL SELECTION BY TENURE, TOTAL SAMPLE AND DISTRICT OF COLUMBIA

[Percent frequency]

Factors	Total owners	Total renters	District of Columbia owners	District of Columbia renters
Tax advantages	8	2	8	0
Community reputation	25	19	20	24
Former resident or family currently lives there	31	34	32	30
Proximity to job	63	63	68	62
Nontax economic factors	17	16	18	10

FACTORS CITED IN NEIGHBORHOOD SELECTION BY TENURE, TOTAL SAMPLE AND DISTRICT OF COLUMBIA

Tax differentials	5	0	8	0
Neighborhood amenities	72	41	76	52
Housing characteristics	39	25	36	16
Transportation factors	44	54	32	52
Nontax economic factors	32	30	28	22

The factors cited by new to the region movers as important in selecting their jurisdiction of residence differed only slightly from those reported by the total sample. Owners were basically the same with variations limited to a few percentage points. Renters showed the greatest differences with these being a far lower percentage for "Former Resident or Family Currently Lives There"—18 percent, and higher percentages for "Proximity to Job"—82 percent, and "Non-Tax Economic Factors"—19 percent.

Movers locating in the District of Columbia exhibited nearly the same locational preferences as did the total sample. As can be seen in the table on page 53, the frequencies associated with the location factors for jurisdictional selection do not vary appreciably among owners and show only minor differences for renters.

Factors Influencing Neighborhood Selection

Five groupings of location factors relative to neighborhood selection have been formulated based on the literature and research on residential mobility, the responses to the questionnaire, and the requirements of this study. These differ only slightly from the categories presented as considerations of jurisdictional selection. The primary difference between these sets of factor categories is scale. The factor categories formulated relative to neighborhood selection reflect localized considerations. These include: tax differentials, neighborhood amenities, housing characteristics, transportation factors, and non-tax economic factors.

Tax differentials.—While tax differentials exist at local jurisdictional and state levels they may be perceived at sub-local or neighborhood levels. To insure that these preceptions were reported, irrespective of their validity, these have been isolated and reported as neighborhood factors.

Neighborhood amenities.—This category includes those localized conditions which may distinguish a neighborhood such as good parks and schools, absence of traffic and noise, a pleasant setting, trees, low densities, historical values, diversity of activities, and so on. Amenities vary and reflect the values of the beholder.

Housing characteristics.—These are factors tied directly to the housing unit (excluding cost) such as those relating to the yard, the style of the house, internal space configuration, shade or natural lighting, quality of construction, security, and unit availability.

Transportation factors.—All access factors were grouped together without distinguishing among access to public transportation and necessity goods and services which were often cited by renters, especially those with incomes below $10,000, and access to shopping centers, good highways, and cultural facilities. This grouping reflects the value which accrues to a housing unit from its proximity to goods and services and a variety of activities.

Nontax economic factors.—These economic factors generally include housing cost, rents which are affordable, and houses which seemed to be a good buy. Incorporated within this framework are considerations of value of investment (property values) and cost-savings resulting from better transportation.

Both owners and renters identified neighborhood amenities and transportation factors as being the top two considerations in neighborhood selection although tenure affects their magnitudes and priorities.

Owners overwhelmingly cited neighborhood amenities with 72 percent of the respondents listing that factor. In contrast, only 41 percent of the renters cited neighborhood amenities. Access was more important to renters, being cited by 54 percent of the renter respondents. The characteristics of the housing unit were more important to the owner (39 percent) than the renter (25 percent) while non-tax economic factors were about the same for owners and renters. Tax differentials were not mentioned by any of the renters surveyed and only 5 percent of the owners stated that tax factors were involved in their neighborhood location decision.

New to the region movers expressed similar priorities among their neighborhood selection factors but showed variation in the actual frequencies with which some factors were cited. Owners, while maintaining similar frequencies for the top three factors, "Neighborhood Amenities"—74 percent, "Transportation Access"—42 percent, and "Housing Characteristics"—37 percent, indicated stronger concern regarding "Tax Differentials"—16 percent and lesser consideration of "Non-Tax Economic Factors"—21 percent. Renter frequencies were slightly higher for each factor which suggests better articulated values and discriminatory powers but these values parallel those of the total renter sample.

Compared to the total sample, neighborhood selection factors cited by District movers show a strong consideration for neighborhood amenities by both owners and renters and lesser concern for housing characteristics, transportation factors, and non-tax economic factors. In most cases these variations between the District sample and the total are small but do suggest different values especially for renters where these differences are most evident.

RELATIVE SIGNIFICANCE OF TAX DIFFERENCES IN RESIDENTIAL LOCATION SELECTION

To assess the respondents' knowledge of taxes within the metropolitan context, each was asked several questions regarding taxes as location factors, differences in local tax burdens, and specific tax concerns irrespective of whether the respondent had cited tax differentials or advantages as being among their location determinants.

For those thirteen (13) respondents who listed tax issues among the factors they considered in selecting their residence, only three (3) indicated that taxes were a primary consideration. Seven (7) stated that taxes were among several important factors, and three (3) considered taxes only slightly. Only two (2) renters cited taxes as a location factor and for these it was not a primary consideration.

Those respondents who did not voluntarily mention taxes (87% owners and 98% renters) were asked to evaluate retrospectively whether relative tax burdens in the metropolitan area actually influenced their location decisions. The following table reports these responses.

In spite of the relatively low level of locational significance, 78 percent and 76 percent respectively of the owners and renters surveyed stated that they thought that there were differences in local tax burdens within the metropolitan area. The significance of the local tax burden as an inducement for relocation under circumstances where this burden became unfavorable compared to other local jurisdictions was found to be greater among renters than owners. Forty (40) percent of the renters surveyed stated their intent to move if local tax burdens became relatively more unfavorable where only 24 percent of the owners expressed that willingness.

IMPORTANCE OF RELATIVE TAX BURDEN IN LOCATION DECISIONS AMONG RESPONDENTS NOT INITIALLY CITING TAXES AS A LOCATIONAL DETERMINANT

Importance	Total owners	Total renters	District of Columbia owners	District of Columbia renters
Primary consideration	1	2	2	2
Among several important factors	9	2	4	0
Only slightly considered	20	12	20	14
Did not really consider	57	82	58	84
No response	13	2	16	0
Total	100	100	100	100

The type of tax cited by respondents as being the one which most affected them or of which they were most conscious differed based on tenure characteristics. For owners, 54 percent indicated concern over real property tax inequities and 20 percent expressed concern regarding income tax burdens. The remainder either did not express a view (13 percent) or objected to sales taxes (6 percent) or the magnitude of the general or total tax burden (7 percent). Renters, on the other hand, expressed a more diverse list of tax objections. The major sources of concern were: income tax (29 percent), total taxes (20 percent), sales taxes (17 percent), and real property taxes (14 percent). Maryland renters were concerned with the piggy-back county income tax and in Prince Georges County, renters expressed near unanimous displeasure with the renters' tax. In Northern Virginia, renters (8 percent) expressed displeasure with the personal property tax. Other taxes cited included: auto (3 percent) and gas (2 percent). Seven percent had no opinion.

New to the region movers were slightly more conscious of tax differentials in the metropolitan area than the total sample but still this degree of recognition (20 percent for owners, 4 percent of renters) is very small. For those new to the region movers not directly acknowledging taxes as a location consideration, even in retrospect, taxes were not a significant locational consideration with 58 percent of the owners and 74 percent of the renters stating that they did not include tax factors in their location decision. Yet, 84 percent of the owners and 78 percent of the renters stated that they thought that there were differences in local tax burdens within the metropolian area. This is a higher

recognition percentage than for the total sample. However, the new to the region movers appear less sensitive to these tax burdens based on their responses to a question concerning whether they would relocate if their tax burdens became relatively more unfavorable. Only 21 percent of the owners and 30 percent of the renters stated that they would consider moving under such conditions. New to the region movers who were owners expressed greater concern over real property taxes than the total sample and new to the region renters were more concened with income taxes than their counterparts in the total sample. Overall, however, they reflected a similar pattern of responses to the question regarding which tax most affected them.

The residential survey sample in the District ignored tax considerations to about the same degree as the total sample (84 percent of the owners did not consider taxes, 100 percent of the renters did not consider taxes). Of those not directly considering taxes, when asked in retrospect if taxes were important, the majority stated no. The full range of responses is shown on the preceding table. These closely parallel those of the total sample for both owners and renters. District movers who are owners seem slightly more informed while renters are slightly less informed regarding metropolitan tax differentials than the remainder of the sample with 82 percent of the owners and 72 percent of the renters stating that they thought there were local tax differences. The tax types cited as those which most affect District residents (recent movers) are shown in the table below.

For owners in the District, sensitivity to the property tax (46 percent) is less than that of the total sample (54 percent) and concern regarding the income tax (20 percent) is the same as that for the total sample. However, renter movers in the District reveal stronger reaction to the income tax (34 percent) and total tax burden (26 percent) than reflected in the total renter sample, 29 percent and 20 percent respectively. Twenty-two (22) percent and 40 percent respectively of the owner and renter movers in the District indicated their willingness to relocate if their relative tax burden became more unfavorable; this mirrors the reaction of the total sample.

TAX WHICH MOST AFFECTS RECENT MOVERS BY TENURE, PERCENT

Tax	Total owners	Total renters	District of Columbia owners	District of Columbia renters
Income	20	29	20	34
Sales	6	17	6	20
Real property	54	14	46	4
Auto	0	3	0	4
Gas	0	2	0	2
Total burden	7	20	12	26
No response	13	7	16	10
Total	100	100	100	100

VI. Analysis of Research Findings

The survey findings presented in the preceding two chapters provide answers to the research questions raised in the Introduction. These questions will be answered in this chapter and the findings will be examined as to their possible causes and meanings.

This study has identified the factors which appear significant in the business location decision and the degree to which tax differentials impact upon site location. This research has also furnished insights regarding sensitivity of businesses to changes in comparative tax burdens as well as indicating the relative dissatisfaction among those taxes to which businesses are subjected. Finally, these findings provide for differentiation between the behavior of those firms locating (relocating) in the District of Columbia in comparison to the total sample.

Factors influencing jurisdictional selection

The survey revealed that businesses, especially those relocating within the metropolitan area and more particularly, those seeking a suburban location, initiated a relatively broad-based search for their new location, with 59 percent of the sample stating that they seriously considered more than one jurisdiction in the selection process. In contrast, firms locating in the District of Columbia were much less likely to seriously consider other jurisdictions for possible location.

This characteristic of the firms locating within the District is reinforced by the source or origin of the firms locating in the District relative to those locating in suburban jurisdictions. New to the region firms composed three-quarters (76 percent) of the firms locating in the District where in the suburban jurisdictions, two-thirds (68 percent) were acquired from the District; i.e., firms relocating from the District to the suburbs. Thus, it might be concluded that because so many of the suburban firms originated within the region (83 percent) that their knowledge of interjurisdictional differences in locational factors was far superior to those firms (in the sample) choosing to locate in the District where only 24 percent comprised relocations, firms previously located in the region.

This difference is also revealed in the factors cited by these firms as being of primary importance in their choice of jurisdictional location. For the District, whose survey sample was composed predominantly of new to the region firms, location overwhelmingly reflects market and institutional factors. These include consideration of access to customers, often the Congress and Federal agencies, and the prestige of the location. While these factors remain important among the total sample, operating costs and transportation factors are also significant jurisdictional selection criteria. Tax advantages (disadvantages) do not appear to be important in the choice of a jurisdiction for business location. The range of the factors cited as being important and variation between the District sample and the total sample seems to reflect the nature of the firms attracted to the District and suburban jurisdictions. The extent to which these differences in firms is a result of differences in locational characteristics within the central city and the suburban jurisdictions cannot be determined from the data generated in the survey.

Factors Influencing Neighborhood Selection

Once a jurisdiction for business location has been selected, the factors which determine an appropriate location within that jurisdiction appear relatively uniform among firms. The adequacy of the space or

building is most important in the selection process. Local access and parking are also significant. Economic factors and neighborhood quality, while not mentioned as frequently, are still widely cited as being determinants of neighborhood location. These findings do not reveal substantial jurisdictional differences with the one exception that District firms place somewhat greater emphasis on neighborhood quality than do firms locating in suburban jurisdictions. This variation seems again to reflect the nature of the firms attracted to the District where their functions require a somewhat greater consciousness of the image and prestige values associated with the location. For District firms in the sample, selection of the jurisdiction and a neighborhood within it appears to reinforce this locational dependence on psychic factors.

Taxes As A Locational Factor

Business location does not appear to be influenced by intraurban tax differentials. Only 15 percent of the sample voluntarily cited that they included taxes among their primary determinants of jurisdictional selection. In the District, tax considerations were cited by only 10 percent of the sample. Yet, one-half of the total sample stated that they thought that tax differences existed within the metropolitan area. Respondents in the District sample were less certain with only 38 percent acknowledging interjurisdictional tax differences. This lack of knowledge concerning the tax structure, its incidence, and individual burdens can be explained in several ways. One explanation might contend that this tax ignorance is associated with the low ranking of taxes as a locational determinant. A second explanation would associate this tax ignorance with the large number of new to the region firms in the sample, especially in the District. Both explanations must be considered partially valid. What is noteworthy is the general lack of knowledge regarding tax differences within the metropolitan area.

While these business firms did not exhibit great knowledge regarding tax differences, they did indicate a modest sensitivity to potential changes in relative tax burden with 30 percent stating that such a change might cause them to consider relocation. In the District, this sensitivity was much greater than for the sample as a whole, with 43 percent stating that they might consider relocation in response to an increase in relative tax burdens. As a hypothetical question, these responses could be disregarded. But this level of reaction given the relatively low level of tax consciousness among businesses surveyed does suggest that there may be a tax threshold after which tax differentials become a locational determinant.

In terms of types of taxes which seem to cause newly located businesses concern, the pattern reveals little uniformity. The tax ignorance mentioned previously is revealed again with 20 percent and 24 percent respectively of the total and District samples being unable to cite a particular tax which they felt burdensome or inequitable. In the District, the broad array of tax types cited with none being dominant suggests ignorance, disinterest, or the absence of an apparent focus. At least to the firms comprising the District's sample, no single tax seems to be of primary concern. The suburban sample, however, does show some focus with the real property tax being the most frequently cited tax which these firms disliked. Yet, even though the property tax seemed to standout, the sample's responses were widely distributed among nine tax types.

The survey of recent residential movers within the Washington metropolitan area, as reported in Chapter III, revealed the nature of their location determinants differentiated by tenure and central city location. These findings distinguish those factors which contribute to the choice of a jurisdiction from those which are determinants of neighborhood selection. The primary findings of this research are presented and discussed below.

Factors influencing jurisdictional selection

The residential survey revealed that the full location selection process is limited to a small proportion of the total movers. Approximately one-third of the survey respondents stated that they had not seriously considered any other location (housing unit) than the one they now occupied. When these recent movers are added to those not seriously considering housing in more than one jurisdiction (the one they located in), then a residual of only 23 percent (the same of both owners and renters) of the sample seriously examined housing options in more than one jurisdiction. Some difference in the scale of search is exhibited between new to the region movers and movers who are relocating, with the former being slightly more likely to consider several jurisdictions. However, recent movers locating in the District showed the lowest level of interjurisdictional search for their housing. With 77 percent of the total survey respondents stating that they restricted their housing search to a single jurisdiction, it can be concluded that either the search is constrained by overwhelming jurisdictional dominance or house and apartment hunters restrict their primary search to the neighborhood scale and either cannot or do not articulate their decision process at the interjurisdictional level.

While only a small proportion of the sample acknowledged making an interjurisdictional location choice, their responses to the question asking which factors contributed to choosing a jurisdiction in which to locate revealed unusual agreement. For owners and renters overall and in the District sample only, all cited proximity to job as the primary jurisdictional selection determinant. Of secondary importance was the jurisdiction being the place of residence of family or friends or the respondents' previous place of residence; jurisdictional familiarity. The other factors were less frequently cited but the relative priorities among them hold for each tenure and sample grouping reported. Taxes were least significant among the five categories of location factors.

The fact that proximity to job (usually meaning to live in the same jurisdiction in which employed) dominates the selection factors, cited by almost two-thirds of the respondents, does represent a dramatic shift in residential location behavior. The traditional factors relating to place of residence does not identify proximity to job as a major locational determinant. Commutation flows within the metropolitan area do not suggest that living near one's place of employment has shaped many location decisions. Yet, the research on residential location and most actual location decisions reflect old mobility values. The recent rapid increase in transportation costs seems to have made an

impression among recent movers. The sensitivity of the survey sample to this factor may represent a new location behavior, one which will shape future residential patterns as inexpensive mobility shaped the suburbs in the Fifties and Sixties.

Factors influencing neighborhood selection

The factors found important in neighborhood choice reveal some differentiation based on tenure. For owners, neighborhood amenities are the predominant selection factor. For renters, transportation factors are most frequently cited but this factor is not clearly as dominant as neighborhood amenities were for owners. Transportation factors were also important for owners, being cited along with housing characteristics and non-tax economic factors with sufficient frequency to be considered important. For renters, neighborhood amenities were of secondary importance followed by non-tax economic factors and housing characteristics. New to the region movers and respondents in the District's sample reveal these basic priorities.

The respective unanimity among owners and renters regarding their neighborhood selection factors is quite pursuasive and is consistent with the literature which has identified neighborhood amenities as an important factor in which schools were of major significance. Neighborhood amenities were defined more broadly by this sample with schools no more frequently cited than any other concern. The relative importance of transportation at the local level including access to public and private facilities and services (including public transportation) is consistent with the priorities cited at the jurisdictional decision level. The relatively low frequency which housing characteristics received among both owners and renters is surprising as individual needs, it might be expected, would dictate housing objectives to be fulfilled in the location choice. Yet, for renters, housing characteristics received a lower response rate than did non-tax economic factors (in the case of renters this usually meant rental rates). For owners, housing characteristics were more important (third priority) than non-tax economic factors but still did not reflect a high level of recognition Even though taxes do not have neighborhood significance, a few respondents stated a tax consideration associated with the neighborhood location decision. However, the frequency with which taxes were cited was not significant relative to the other factors.

Taxes As A Location Factor

For owners and renters, taxes were not identified as being an important location factor. Only 13 percent of the owners and 2 percent of the renters mentioned that taxes had been considered along with other location criteria. Yet, most (78 percent owners, 76 percent renters) recent movers thought that there were tax differences within the metropolitan area. In spite of this low recognition level, renters seemed sensitive to tax burden differentials as 40 percent said if their relative burden changed, they would consider moving. Owners were less inclined to move under such circumstances, with only 24 percent saying that they might. Tax objections among owners focused on real property taxes followed by income tax. Renters reflected a diversified listing of tax types which they thought unfair or objectionable with income,

sales and aggregate taxes being the most frequently mentioned. There were only minor variations among survey respondents when stratified by whether they were new to the region or moved to the District.

The generally low level of tax cognizance and sensitivity among owners and renters (although there are some differences between those groups) suggests not only that other location factors are much more significant to the decision-maker but that residents accept taxes as a cost of living and consequently suppress them as a decision variable. While selective taxes were cited with sufficient frequency to represent genuine concern, too frequently the so-called nuisance taxes or taxes that amount to small monetary values, caused the more violent reactions and thus skew the findings. It can be concluded here that taxes are not a significant interjurisdictional location determinant and that the survey sample, while acknowledging the existence of tax differentials, were somewhat fatalistic when they considered their locational reactions to these taxes and consequently, their tax sensitivity in terms of relocation potential was shown to be small.

VII. Policy Implications and Recommendations

The research findings reported in the preceding chapters have presented insights regarding the locational behavior and values of recent business and residential movers in the Washington metropolitan area. The purpose of this research was to determine whether or not intraurban tax differentials were significant determinanants of the regions evolving development pattern in order that proposals to revise the tax structure in the District of Columbia could be formulated with knowledge regarding these potential secondary effects. To the extent that the location decision reflects variations in local tax incidence, equity, and amount, then recommendations to alter the tax structure in a jurisdiction could be expected to change its relative attractiveness to certain types of economic activities and ultimately affect the jurisdiction's mix and quality of development which in turn would have direct public revenue and expenditure implications. The policy implications of these research findings are presented below.

BUSINESS LOCATION

The survey of recent business movers in the Washington metropolitan area revealed that taxes were not important determinants of jurisdictional choice. For both the new to the region firms and local firms relocating within the region, tax considerations were the least important location factor among all factor categories. Reinforcing this finding is the high level of tax ignorance and the general insensitivity to relative tax burden differentials revealed in the survey.

That tax factors were found not to be locationally significant does not mean that the business location decision is haphazard or casual. To the contrary, the firms surveyed indicated very specific location criteria which appear to dominate the location choice thus overshadowing relatively less important factors such as tax cost differentials. These costs are viewed by many firms as unavoidable costs of business and so long as they are not unusually inequitable their burden

is more psychological than real in the context of total location (relocation) and operating costs. This conclusion is supported by the lack of agreement among businesses regarding a particular tax type which would most affect their business and might influence their location or relocation decision. The responses of businesses surveyed would suggest that for all but a few the threshold whereafter local tax burdens become operative in the location decision has not yet been attained and that market considerations, transportation costs, and operating costs are the jurisdictional selection factors which control the firms choice.

The tax policy implications of these findings are not dramatic. Inasmuch as no real intraurban tax sensitivity was revealed, tax policy does not appear to be distorting the physical and economic development patterns in the metropolitan area relative to business locations. While so-called nuisance taxes (e.g., parking) and a few other tax types (e.g. franchise) which have singled out selective business activities elicited some dissatisfaction among survey respondents, in general the current relative tax structure in the region does not appear to significantly affect location choice. Therefore, a tax policy designed to attract business location would not be effective unless it created a major cost savings relative to other locational and operational considerations. Such a policy would be unwise for other important reasons.

Similarly, revisions to the tax code as it applies to businesses in the District will not significantly affect business location decisions among new firms to the region whose decisions to locate in the District appear relatively inelastic. Such changes, if they result in increased relative tax burdens, may have some impact on existing businesses in the District which revealed a strong trend toward relocation to the suburbs in the survey. The reasons contributing to these trends are not fully disclosed in the survey but relative tax burdens are not among them. However, if the District is becoming relatively less competitive for business location compared to the suburban jurisdictions, then the accumulation of factors increasing the costs of location in the District will become more significant in the decision at the margin. Unfavorable tax treatment could become operative as a locational determinant under such conditions.

RESIDENTIAL LOCATION

The survey of recent residential movers in the Washington metropolitan area revealed the limited extent of serious interjurisdictional location consideration with only 23 percent of the sample acknowledging a serious search extending beyond a single jurisdiction. Consistent with this fact is the singular focus among this sample (owners and renters) in terms of the jurisdictional selection criterion which dominates their choice: proximity to job. Intraurban tax differentials are not significant in this selection process for either new to the region movers or persons relocating within the metropolitan area. However, in spite of this general lack of actual tax recognition in the selection process, residents are much more sensitive to tax issues within the area than were firms in the business survey. A large proportion

of respondents stated, when asked, that they thought there were differences in tax burdens among the area's jurisdictions. Renters indicated considerably more elasticity in their relocation behavior in response to increases in relative local tax burdens than did owners. The differences can probably be explained, however, by the inherent mobility differences that exist between renters and owners.

The location decision process among residents appears to have a more restricted geographic scope than that of businesses seeking new locations. Jurisdictional choice may or may not be based on a rigorous or structured assessment of alternatives (more often not), but the choice is rather quickly made and quite fixed. The reasons for choice are a composite of objective and subjective factors. At the neighborhood or subjurisdictional level, however, the residential location selection process appears more programmatic, although several factors are cited as being important to this local decision with relatively uniform frequency.

Tax knowledge varies considerably between owner and renter subsets of the residential survey sample. Renters generally expressed only limited understanding of their local tax situation and often offered remarks which demonstrated their confusion and misinformation. These remarks include the incidence of taxes—"I rent and therefore I'm not affected by local taxes," the type of taxes—complaints from District renters regarding sales tax on food purchases, and anger over taxes which cost the individual a small absolute amount in comparison to other tax types—tax on personal property in Virginia, renters' tax in Prince George's County, automobile registration tax, tax on food in restaurants in the District. This general confusion and in many instances pure disinterest among renter respondents was revealed in their answers to other survey questions. Many respondents did not know why they chose their location, not because they did not make a conscious choice but that they never articulated the choice process to themselves or others. Owners, on the other hand, because of the investment and permanency aspects of homeownership were able to define their selection process more definitively and express themselves more articulately on the subjects covered in the survey.

Because of the basic differences between owners and renters in direct tax liability, the nature of their location decision process, and their income distribution, the tax types identified as constituting burdens also differ among these two groups. Owners expressed general concern over real property tax inequities and secondary concern regarding income taxes. Together these two tax types accounted for three-fourths of the owner responses. In contrast, renters' tax concerns represent a broad range of types with much less agreement than owners expressed.

The tax policy implications of these general findings reflect the low level of residential locational effects associated with intraurban tax differentials and the general ignorance or disinterest among a large portion of the population regarding taxes in general. Respondents' comments emphasize equity and are not generally critical of the need to raise revenues. It is the fairness of the tax which seems to be of primary concern and not its absolute monetary value. If equity is a primary objective in tax revision, then taxes will continue to have only marginal impact on residential location.

While renters are both more mobile and locationally elastic than owners relative to changes in relative tax burdens, their jurisdictional choice is dominated by access and job location considerations. As the costs of commutation increase relative to the costs of housing, renters (and owners) can be expected to become more sensitive to issues of proximity than differences in amenities, tax costs, and other economic considerations which in aggregate vary only slightly from jurisdiction to jurisdiction. Consequently, it can be stated that marginal cost differences including tax differentials among the jurisdictions within the metropolitan area will diminish in importance relative to transportation considerations in the future. If this is so, then tax policies will have limited impact on the distribution of residents in the metropolitan area. The one exception to this conclusion may be among households having high incomes where the progressivity of the District's income tax and the regressivity of the Maryland and Virginia income taxes account for substantial differences in relative tax liability. While logic suggests that these differences should influence residential location, the research findings do not show this to have been true among the recent movers.

Tax ignorance should be addressed in a formal manner within the metropolitan area. The responses to the residential survey (also the business survey) revealed an appalling deficiency in simple tax knowledge among the area' residents. If an informed citizenry contributes to better government, then educating the general public regarding revenue issues can be expected to improve the public's acceptance of tax decisions and willingness to accommodate changes in the tax structure. More importantly, a better informed public regarding tax issues will result in reducing tax rhetoric and generate a more positive climate for tax revision.

RECOMMENDATIONS

As intraurban tax differentials have been shown to be a marginal determinant for both business and residential location and these decisions appear to reflect a logic which closely approximates that described in theory and research, proposals for tax revisions in the District of Columbia should be sensitive to maintaining the relatively neutral position in the location process. Tax proposals which would, if implemented, distort the logic of these location decisions will result in developmental (economic, physical, and social) side effects which may be undesirable and certainly unplanned. Conscious effort should be undertaken to determine the non-tax effects of all tax revision proposals in order that decisions regarding tax revisions can be made with full disclosure of associated direct and indirect effects.

The general tax ignorance found among survey respondents should not be interpreted as insensitivity to tax issues but rather represents a serious inability to understand them and, therefore, may result in a blind resistance to tax revision irrespective of the substance of the proposed change. Thus, tax education directed at the general public should receive attention in order to facilitate improved understanding and to defuse potential resistance to change which derives from ignorance and misunderstanding.

Finally, it should be remembered that this research has been directed at assessing only the locational sensitivity to intraurban tax differen-

tials. The findings of this study do not include consideration of other types of tax effects on urban development. Thus, while the findings suggest little or no significant locational effects associated with intra-urban tax differentials, this should not be interpreted as stating that taxes have no effect on residential or business investment or reinvestment. The available research on these and other tax effects is sound and should be referred to for insights relating to those issues. This research has focused only on locational decisions as this question has not been previously examined empirically at the metropolitan scale.

As a final note, the findings of these surveys have broad planning and development implications beyond considerations of tax effects. The findings reveal strengths and weaknesses in the District of Columbia which are shaping its growth pattern. The desirability of these trends and the opportunities inherent in the District's locational characteristics should be seriously evaluated by other appropriate public agencies.

Appendix A.—Survey Methodology

SURVEY INSTRUMENT

Two short questionnaires were designed to survey the two-hundred (200) households and fifty-six (56) businesses upon which this research study was focused. Their design was initially determined from an examination of relevant background data and research. As the latter proved somewhat meager and only peripherally related to this research effort, the scope of inquiry in the questionnaires was finally limited to those factors which were discussed in the research proposal with respect to business and residential location. Both questionnaires have a similar format and a discussion of each follows.

Residential

The questionnaire "Factors Influencing Residential Location in the District of Columbia and Maryland and Virginia Suburbs," has thirteen (13) questions. A copy of the questionnaire is included at the end of this Appendix.

Conceptually, the questionnaire is divided into three (3) basic parts. The first part was primarily introductory, establishing necessary background information on each respondent. It is composed of Questions 1 through 4, all being very structured questions. The second set of questions is focused upon the respondent's search and decision-making process. Questions 5, 6, and 7 therein allowed the respondent to identify those primary factors involved in this process through very open-ended questions. Finally, the third section of the questionnaire dealt primarily with local tax burdens and their effects on the respondent and his location. This section, including questions 8–12, contains both structural and open-ended questions. The final question (No. 13) concerning gross family income should have ideally appeared among the first few questions, yet because of the question's sensitive nature, it was placed at the conclusion of the survey.

Each question was designed to obtain only the data necessary for this research effort. To be sure, many other inquiries could have been made once a willing respondent was contacted, however, for this study's purpose, such information was neither necessary nor desirable. The authors were concerned with identifying only those items which affected a household's location, not the entire residential location decision process by specific socio-economic groups or by specific types of housing.

The rationale supporting most of the questions are clear, however a brief explanation is useful in order to have a better frame of reference for the actual questionnaire design.

Question 1.—The first question initially differentiated respondents according to tenure status. They were labeled owners, renters, or "other," the latter including only a few persons residing with family or close friends, housesitters, and the like.

Question 2.—Because the focus of the survey was on people who had recently moved or bought a home, sample selection was limited to those who had lived at a certain address less than three years.

Question 3.—This question subdivided the analysis further by distinguishing between households locating for the first time in the metropolitan area and those relocating within the region's jurisdictions.

Question 4.—A determination of the incidence of shifts in tenure was useful to test whether certain respondents with recent tenure changes were more sensitive to the incidence of local taxes than others.

Questions 5 and 7.—Question 5, the first of the more open-ended questions, was closely related with Question 7. It focused on jurisdictional decision-making, involving a "macro" or area-wide locational concept, while Question 7 determined those factors which primarily affected an individual's decision to locate at a particular address; a "micro" level of decision-making.

The rationale for such an approach were to differentiate between what some researchers label "primary" and "secondary" locational factors. In other words,

given an initial decision to reside in a particular jurisdiction (if any), what other sorts of factors influenced a final locational decision? The distinction between a particular house or neighborhood and a certain jurisdiction is thus clarified. Together, Questions 5, 6, and 7 were mutually reinforcing and, in actual administration, many respondents "rearranged" their own answers to Questions 5 and 7 after both questions were asked, thus clarifying their decision-making process.

Question 6.—One of the more useful indices of location decision-making is the extent of "searching" a particular household may have undertaken. Question 6 established the extent to which respondents had seriously considered other locations, whether within the same neighborhood or a neighboring jurisdiction. As aforementioned, this question also served as a stimulus to Questions 5 and 7 forcing the respondent to recall some of his earlier locational decisions.

Question 8.—Although the question is self-explanatory it should be noted that the questionnaire was designed so that its administrator would not introduce tax factors before this point. It was hypothesized that those who were highly sensitive to tax differences or those to whom taxes played an important part in their location decision-making, would have mentioned tax factors in either Question 5 or 7. In so doing, they would have established the significance of the factors themselves. Question 8, then, checked the extent to which relative tax burdens actually influenced their decisions as well as the relative significance of tax burdens among all location factors.

Question 9.—This question was designed to explore the degree to which the respondent was aware of or informed regarding interjurisdictional tax differences. It also served to illustrate certain myths which an uninformed public may hold to be true.

Question 13.—Data concerning income stratification were necessary in order to test the relative sensitivity of certain groups of respondents to various locational factors. The broad groupings were designed to relate with the various levels of income tax burdens associated with a particular jurisdiction's tax structure.

Business

The business questionnaire was designed for those broad categories of business in the WSMSA which have market characteristics permitting locational flexibility on an interjurisdictional basis. These establishments were generally classified as being either retail, finance/insurance/real estate (FIRE), business services, manufacturing, wholesale, associations, professional, restaurants, or administrative/headquarters of chains or firms having more than one outlet. Other types of businesses were occasionally surveyed but were not separately classified.

The business questionnaire "Factors Influencing Business Location in The District of Columbia, Maryland and Virginia Suburbs" is in a format similar to the residential questionnaire, although some differences are to be noted.

Question 2.—It was the study's objective to contact business establishments which were new, had recently moved, or were considering expansion (additional branches) or relocations. Term of occupancy was divided among three categories of length, with sample selection excluding those which had been at the present location more than five (5) years.

The remainder of the questions are substantially the same as those on the residential questionnaire with the exception of Questions 10 and 11. In Question 10, other categories of appropriate types of taxes were added and, in Question 11, the number of full and part-time employees was determined. It was hypothesized that the size of business as reflected by its number of employees, might be a useful index to the business's tax sensitivity.

After initial design, the questionnaires were field-tested on sample respondents. No significant adjustments were necessary; only minor clarifications in terminology and the ordering of certain questions.

The questionnaires were also circulated for comment and review among the staff of the D.C. Tax Revision Commission and The Metropolitan Washington Board of Trade. There being no further problems with its design, the questionnaire format was in its final form.

SAMPLE SIZE

Residential

The number of household samples, established in order to meet time and cost constraints, was geographically respresentative of the entire Washintgon metropolitan area. As it was directed towards the District of Columbia, however, the

total sample was weighted in favor of the city with approximately one-half the respondents residing in the District. The remainder of the sample was drawn from two (2) Maryland counties, Montgomery and Prince George's Counties, and three (3) Virginia jurisdictions, the City of Alexandria, Arlington County, and Fairfax County. In recent years, the WSMSA has been expanded to include several additional counties, yet it was assumed that those persons living closer to the central city would be the most likely candidates for intraurban mobility and would have stronger ties therein than those who lived in the outlying portions of the region.

Two groups of residents were interviewed during this study, those who rented and those who owned their homes. One-hundred (100) households were interviewed from each tenure category; 50 from the District of Columbia, 25 from the Virginia jurisdictions, and 25 from Maryland Counties. Because the samples were to be geographically respresentative of their respective jurisdictions, the selection process was further disaggregated as follows:

	Renters	Homeowners
District:		
Northwest	13	13
Southwest	12	12
Southeast	12	12
Northeast	13	13
Total	50	50
Virginia:		
Alexandria	7	7
Arlington	6	6
Fairfax	12	12
Total	25	25
Maryland:		
Montgomery	13	13
Prince George's	12	12
Total	25	25

Business

The number of business samples was limited by the scarcity of information documenting recent business moves. The sample was drawn from both state portions of the region and the District of Columbia and thus remained geographically representative of the study area. A total of 56 business surveys were completed.

SAMPLE SELECTION

Residential

The sample of residential homeowners was selected randomly from records of property transfers during the past two years. The property transfer records, published by Lusk and Company, were compiled for each jurisdiction with the District's transfers being further divided into its four quandrants.

The sample of residential renters was compiled by using apartment listings in the Haines and Company Criss-Cross Directory, an inverse telephone directory which lists persons by their addresses, not their names. Once a listing of apartments was obtained, a list of the newer telephone numbers was compiled from which to contact each household. In selecting apartments, every effort was made to have a relatively equal number of high-rise and low-rise apartments. This was done to minimize any bias associated with various physical building types.

In order to sample households from throughout each respective community, only one renter and/or homeowner questionnaire was taken from any street within a jurisdiction. It was felt that multiple questionnaries from the same street or apartment complex would unduly emphasize particular neighborhoods and prevent potentially diverse cross-sections of renters or homeowners from being sampled.

Business

Samples for the business questionnaire were taken from three primary sources: The Metropolitan Washington Board of Trade, local economic development commissions, and the Shannon and Luchs Company (a local real estate firm). Each

of these sources provided lists of establishments which had recently located or soon planned to (re)locate in the WSMSA. The authors supplemented this listing with other business firms which they knew had recently moved into or within the area. The final sample was of sufficient size and quality to be representative and provide a data base for its statistical analysis.

ADMINISTRATION

Method

To maximize the quality of information gained from the samples, all questionnaires were administered by enumerators. Several graduate students were hired and trained in order to assist the authors in the survey. The questionnaires were administered by telephone in order to work within time constraints and increase the response rate among those residents and businesses which were contacted. In general, the enumerators used the introductory statement which accompanies the questionnaire. Care was taken not to bias or thwart potential residential respondents by mentioning "taxes" or "Tax Revision Commission" prior to Question 8. In the case of business establishments however, the D.C. Tax Revision Commission was identified in order to elicit frank responses from otherwise busy companies and firms.

While the respondents to the residential questionnaire were limited to homeowners and heads-of-households, business questionnaire respondents varied widely. The sources used for sample selection often provided the names of the appropriate persons to contact, ranging from CPAs to owners and presidents. Where these names were not available, however, every effort was made to assure that the enumerators interviewed the individual(s) responsible for a particular business' location decision-making.

Analysis

The data developed from the survey were tabulated and coded for entry to the George Washington University's computer center. Using the center's SPSS package, frequency and contingency tables were prepared for residential and business responses. Questions 11 and 12 from each respective questionnaire were open-ended questions which were not originally intended for quantification. These two questions were useful to the authors in their analysis of tax policies and provided a foundation upon which to develop some policy recommendations to the Tax Revision Commission.

Introduction to Business Questionnaire

Hello, is this Mr./Mrs./Ms._____?

My name is_____. I'm doing some research for the District of Columbia Tax Revision Commission where we are trying to determine the reasons why businesses choose to locate in the District of Columbia and other jurisdictions within the metropolitan area. I'm calling you because we're primarily interested in talking to businesses which have (recently) moved or relocated in the metropolitan area.

If you have a few minutes, I'd like to ask you a few short questions about what factors you considered in choosing your business location. This questionnaire is short and, of course, confidential. Your answers and the answers of other businesses surveyed in the D.C. area will help us to define the factors which businesses consider important when choosing a particular neighborhood or jurisdiction in which to locate.

Factors Influencing Business Location in the District of Columbia, Maryland and Virginia Suburbs

Interviewer_____ Sample Name_____

Date_____ Address_____

Time_____ Telephone #_____

1. Type of establishment:

   (*a*) retail_____; (*d*) professional_____;

   (*b*) FIRE_____; (*e*) other_____;

   (*c*) business service_____;

2. How long has your business been located at your present address?

   Less than 3 years____; 3 to 5 years____; more than 5 years____;

3. Was this business operated elsewhere before you moved to your present address? Yes____ ; No____ ; If *yes*, where?

Outside Washington area (new to region)_____ ; D.C._____ ;
Maryland (city/county)_____
Virginia (city/county)_____

4. What influenced your decision to locate in (jurisdiction X) rather than another jurisdiction in the metropolitan area?

(*a*) _____
(*b*) _____
(*c*) _____
(*d*) _____

5. Before moving (starting) your business, did you seriously consider other locations? Yes____ ; No____ ; If *yes*, where?

(*a*) In the same neighborhood/shopping area?_____
(*b*) Elsewhere in the same jurisdiction?_____
(*c*) In another jurisdiction? (identify)_____

6. What were the primary factors affecting your decision to locate (relocate) at your current address?

(*a*) _____
(*b*) _____
(*c*) _____
(*d*) _____

If TAXES were mentioned in Questions 4 or 6 . . .

7. You mentioned that taxes were a factor in your location decision. To what extent did the relative tax burdens in the metropolitan area actually influence your locational decision?

(*a*) Was the primary consideration (most important)_____ ;
(*b*) Was among several important factors, such as_____
_____ ;
(*c*) Was considered only slightly_____ ;
(*d*) Of minor importance; did not really consider_____.

If TAXES were *not* mentioned in Questions 4 or 6 . . .

You did not mention taxes when I asked you what some of the most important factors were in selecting your present location. In retrospect, to what extent did the relative tax burdens in the metropolitan area actually influence your locational decision?

(*a*) Was the primary consideration (most important)_____ ;
(*b*) Was among several important factors, such as_____
_____ ;
(*c*) Was considered only slightly_____ ;
(*d*) Of minor importance; did not really consider_____.

8. Do you think there are differences in local tax burdens for your type of business among the different jurisdictions within the metropolitan area?

Yes____ ; No____ ; Do not know____ ;
If YES, what do you think they are?_____
_____.

9. If the local tax burden becomes more unfavorable in (jurisdiction X) compared to those in other area jurisdictions, would you consider relocating?

Yes____ ; No____.

10. Of all local taxes, which is the one that most affects your business and which might influence your location or relocation decision?

income_____ ; property, real_____ ; or personal_____ ; gross receipts_____ ;
inventory___ ; sales___ ; payroll___ ; utilities___ ; excise___ ; licensing___ ;
others _____ ;
Total tax burden_____?

11. What do you feel is inequitable about that (#10) tax?_____
_____

12. Approximately how many persons do you now employ? Full-time___ ; P/T___.
Thank you for your time.

Introduction to Residential Questionaire

Hello, Is this Mr./Mrs./Ms. _____?

My name is _____. I'm a student at The George Washington University where we are studying the reasons why people choose to live in the District of Columbia and other jurisdictions within the metropolitan area. I'm calling you because we're primarily interested in talking to people who have recently moved or bought a house.

If you have a few minutes, I'd like to ask you a few short questions about what factors you considered in choosing your place of residence. This questionnaire is short and, of course, confidential. Your answers and the answers of the other people surveyed in the D.C. area will help us to define the factors which residents consider important when choosing a particular house (apartment) or community in which to live.

Factors Influencing Residential Location in the District of Columbia, and Maryland and Virginia Suburbs

Interviewer _____ Sample Name_____

Date _____ Address _____

Time _____ Telephone #_____

1. Do you own or rent the unit in which you live?
   Own_____; Rent_____; Other_____;
2. How long have you lived at your present address?
   Less than 1 year_____; 1–3 years_____; more than 3 years_____;
3. Where did you live before moving to your current address?
   Outside of Washington Metro Area (new to region)____; In D.C.____;
   In Va. (city/county)_____
   In Md. (city/county)_____
4. Did you own or rent your last home? Own____; Rent____; Other ____;
5. What influenced your decision to live in (Jurisdiction X) rather than another jurisdiction?
   (*a*) _____
   (*b*) _____
   (*c*) _____
   (*d*) _____
6. Before selecting the unit in which you presently live, did you seriously consider any others? Yes____; No____; If yes, where?
   (*a*) in the same jurisdiction? _____; c. in another jurisdiction? _____;
   (*b*) in the same neighborhood? ____; d. in D.C.? ____.
7. What were the primary factors affecting your decision to locate (relocate) at your current address?
   (*a*) _____
   (*b*) _____
   (*c*) _____
   (*d*) _____

If TAXES were mentioned in Questions 5 or 7 . . .

8. You mentioned that taxes were a factor in your locational decision. To what extent did the relative tax burdens in the metropolitan area actually influence your locational decision?
   (*a*) Was the primary consideration (most important)_____;
   (*b*) Was among several important factors, such as_____
   _____;
   (*c*) Was considered only slightly_____;
   (*d*) Of minor importance; did not really consider_____.

If TAXES were not mentioned in Questions 5 or 7 . . .

You did not mention taxes when I asked you what some of the most important factors were in selecting your present house (apartment). In retrospect, to what extent did the relative tax burdens in the metropolitan area actually influence your locational decision?

(*a*) Was the primary consideration (most important)_____;
(*b*) Was among several important factors, such as_____
_____;
(*c*) Was considered only slightly_____;
(*d*) Of minor importance; did not really consider_____.

9. Do you think there are differences in local tax burdens for residents among the different jurisdictions within the metropolitan area?

Yes_____; No_____; Do not know_____;

If "YES" what do you think they are?_____

_____;

10. If local tax burdens became more unfavorable in your jurisdiction compared to those in other area jurisdictions, would that cause you to move?

Yes_____; No_____; Do not know_____;

11. Of all local taxes, which is the one that most affects you, of which you are most conscious, and which might influence your location or relocation decision? Income_____; sales_____; property, real_____ or personal_____;

Others such as Cigarette, Alcoholic Beverage, Auto Registration Fees, Gasoline (Check and/or list)_____

Total tax burden_____?

12. What do you feel is inequitable about that (#11) tax?_____

_____

13. In which of the following ranges did your total gross family income in 1976 fall?

Less than $10,000_____; $10,000–$25,000_____; More than $25,000_____.

Appendix B.—Residential Location and Income

To test whether there were significant variations in responses by recent movers to the questions asked regarding the factors affecting their location decisions and general tax sensitivity based on the incomes of the respondents, all survey questions were stratified by tenure and income. The results of this contingency analysis are reported in the following pages.

Income categories were selected to correspond as closely as possible with general income tax liability groupings in order to identify possible sensitivity to a jurisdiction's relative difference in income tax progressivity. Consequently, the categories break at $10,000 and $25,000. The income distribution for owners and renters is shown below.

PERCENT INCOME DISTRIBUTION OF RESPONDENTS BY TENURE

Income category	Owners	Renters	Total
No response	3	1	2
Under $10,000	5	28	16
$10,000 to $25,000	33	58	45
Over $25,000	59	13	37
Total	100	100	100

Distributional differences by jurisdiction show significant variation. For owners, the District's sample corresponds to the total income distribution but Arlington, Fairfax and Montgomery Counties have a relatively high proportion of respondents with incomes over $25,000 while Alexandria and Prince George's County have higher proportions of respondents in the $10,000 to $25,000 range. Among renters, the District's sample is skewed slightly to the lower incomes. Alexandria, Arlington County, and Fairfax County have above average renter income distributions while the Maryland sample (both counties) has slightly lower incomes compared to the average.

Income seems to be a factor in the reasons given by owners and renters for selecting one jurisdiction over another. For owners, the proportion of respondents citing "community reputation," "proximity to job," "non-tax economic factors" and "tax advantages" was relatively greater among those in the above $25,000 income category than for the other income groups. The reverse was true for the factor relating to familiarity—"former resident or family currently lives there." These differences are not sufficiently large (approximately 5 points) to be significant with the exception of "tax advantages." While only eight (8) respondents out of one-hundred (100) cited this factor, seven (7) had incomes above $25,000.

When the jurisdictional selection factors cited by renters are stratified by income groupings, no simple pattern emerges as it did for owners. "Community reputation" is relatively more important to renters with incomes below $10,000

than for other groups. Frequencies for "former resident. . . ." and "proximity to job" closely parallel the renter's income distributions. "Non-tax economic factors" were cited disproportionately more frequently by renters in the $10,000 to $25,000 group than either of the other two income groups. "Tax advantages" was only cited by two (2) renter respondents so the distribution is naturally quite limited; it is split evenly between the top two income groups.

The extent of the location search shows some income sensitivity. For owners whose search extended to more than one jurisdiction (23%), those in the over $25,000 category dominated. Yet, this same group dominated the owners limiting their search to a single neighborhood. However, the middle and lower income groups seemed to have a greater tendency towards a limited search or none at all. The same general pattern emerges for renters. Higher income renters appear to undertake a more definite and broader range search than do renters of lower incomes.

Neighborhood selection factors also exhibit some variation in frequency cited relative to the incomes of respondents. For owners, income is neutral for "neighborhood amenities" and "housing characteristics." Owners in the middle income range appear more sensitive to "transportation factors" while owners in the over $25,000 category demonstrate more sensitivity to "non-tax economic factors." While tax differentials do not exist at the neighborhood level, six (6) owners cited this as a location factors; five (5) of these six (6) were in the over $25,000 income category. For renters, income appears neutral for "neighborhood amenities" and "transportation factors." However, renters in the lower income groups responded in greater relative proportion to "non-tax economic factors" than renters in the higher income groups. The opposite is true for "housing characteristics." From this discussion, there appears to be some variation in neighborhood selection values according to the income of the decision-makers but these differences do not establish a pattern which is invariant with respect to tenure.

In terms of tax recognition, owners cited taxes as a location factor (for jurisdiction and neighborhood) a total of thirteen (13) times. Eleven (11) of these owners listing tax considerations were in the over $25,000 income category. Renters (with the exception of two respondents) did not voluntarily recognize taxes as a location factor.

Knowledge regarding the existence of local tax differentials does not seem to be disproportionately distributed according to incomes. Yet, respondents' reactions to a potential change in relative tax burden do show income sensitivity. For both owners and renters, those in the $10,000 to $25,000 income group react strongly to this proposition. For owners, the middle income range constitutes 33 percent of the sample but comprised 42 percent of the responses stating "yes" that they would seriously consider relocating if the relative tax burden became more unfavorable. For renters, this middle income range accounted for 58 percent of the sample but constituted 76 percent of the "yes" responses.

When asked which single tax most troubled them, respondents cited a list dominated by income, sales, property and total taxes. The primary tax types cited by owners are income (20 percent) and real property (54 percent). These frequencies revealed no income sensitivity. The principal tax types identified by renters are: income, sales, real property and total tax burden. The relative frequency of tax type identified differed according to income category. For income tax, upper income renters identified this with greater relative frequency than sales tax or total taxes. The middle income range renters seemed most sensitive to real property and sales taxes. The lower income renter group cited total taxes with greater relative frequency while expressing limited concern for the other specific tax types.

The responses of owners and renters to the questions regarding the location decision process and general tax knowledge and sensitivity do not reflect a definite pattern when examined relative to the incomes of the survey respondents. Owner and renter responses often differ even within similar income groups. In fact these differences suggest that tenure may be a more significant location decision variable than income. Yet, several findings can be generalized from these otherwise indefinite response patterns. First, persons of higher incomes regardless of tenure appear to undertake a broader and more extensive search for housing than do movers of lower incomes. Second, persons in higher income groups appear to have more definite location selection criteria than persons of lower incomes and these seem to reflect finite factors, especially economic considerations. Third, even though tax advantages were not prominently mentioned among location determinants, when they were cited, they were identified almost

exclusively by respondents in the over $25,000 income category. Fourth, respondents in the middle range income category (owners and renters) exhibited the strongest sensitivity of potential change in relative tax burdens. And fifth, there does not appear to be a significant aversion to specific tax types by particular income groups among owners and only a slight relationship among renters. Consequently, while income does affect the response patterns to this questionnaire, it does not invalidate the non-income differentiated responses. In fact, aggregate responses provide the best data upon which to base the research findings, while income stratification does provide several useful insights, as enumerated above, it must be viewed as a relatively neutral factor in the survey's general interpretation.

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DIFFERENTIAL TAXATION OF LAND AND IMPROVEMENT VALUES

(By George E. Peterson, Director, Land Use Center, The Urban Institute)

I. Introduction

Few tax reform proposals have as long a historical lineage as the recommendation that the property tax be converted to a tax on land values alone. In this country, pressure for land value taxation dates at least from 1879, when Henry George's "Poverty and Progress" was first published. Despite the century-long advocacy of land value taxation, no community in the United States has adopted such a tax system, though relatively heavy use of land taxation has been made in Australia, New Zealand, Jamaica and other countries.

In the United States, experiments with differential rates of property taxation have been limited for the most part to reductions in the rate of taxation on improvements. Over the last decade, many localities have enacted laws that exempt new construction or new investments in the repair and upgrading of older structures from property tax liability. These revisions of the property tax system often have the same developmental objectives as the adoption of land value taxation. Therefore, they are best considered together.

The analysis which follows is divided into four sections. The first section examines the market effects of land value taxation and other variants of the principle of differential property taxation. Especially in an urban setting, the arguments on behalf of land value taxation rest heavily on the incentives it is thought to provide for improved land use and development patterns. The tax has been described by its advocates as an effective weapon in the fight against urban sprawl and in combating deterioration of the older core of American cities.

The second section of the chapter treats the adequacy of land values as a tax base for providing revenue for the District of Columbia. One objective of a tax system should be relative stability in tax rates. A tax base whose valuation grows only sluggishly, if at all, is likely to necessitate continual upward revisions in the tax rate. Therefore, the tax system preferred by most public authorities is one whose base grows steadily over time, without excessive sensitivity to cyclical changes in economic activity.

The third section of this chapter examines the redistributive effects of a conversion from the present property tax system to a system of land value taxation. Such a changeover would immediately redistribute tax burdens—raising the liabilities of some taxpayers and reducing the liability of others. At the same time, it would have significant effects on the market values of different types of property—creating capital gains for some property holders and causing losses of wealth for

others. Such wealth changes could be tempered, of course, if the new tax system were phased in over a period of five or ten years, instead of adopted immediately. However, the shift in tax burdens, and the concomitant changes in wealth, must play a large role in any evaluation of the desirability of altering the tax structure. Experience in other countries demonstrates that the land value tax creates a number of special "hardship" cases, which frequently dominate public discussion of the equity of the distribution of tax burdens. These also need to be anticipated in the evaluation of differential tax proposals.

Finally, this chapter gives brief consideration to the practical difficulties of accurately assessing land values in a built-up urban area. To gain taxpayer and court acceptance, a land value tax would have to be levied against assessed valuations that were perceived to be accurate. Therefore, the feasibility of land value assessments needs to be confirmed before embarking upon tax revision.

Although the analysis presented here focuses on the relative advantages of the uniform property tax and a tax system that imposes a differential burden on land, assuming that both systems operate smoothly, there is always a special burden of proof on the advocates of a major overhaul of a city's tax system. Tax changes of necessity inject uncertainty and instability into economic affairs. Property owners and businessmen in all cities have adjusted their economic behavior to the tax system that prevails there. When tax burdens are shifted by as much as 25 or 30 percent for homeowners, and by 100 percent or more for many owners of commercial property, there is bound to be a period of market disruption. Many a tax reform has been frustrated by the refusal of market participants to accept it as final. If conversion to the land value tax were scheduled to take effect over a five or ten year period, every owner and potential buyer of property would make his own projection of the political likelihood that future administrations would adhere to the schedule as originally drafted. The accompanying uncertainty could defeat the purpose of even a skillfully designed tax revision.[1]

The difficulties of effecting tax reform cannot be made into a reason for perpetuating the *status quo* indefinitely if it is undesirable. They do, however, add to the burden of proof borne by reformers, for the evidence points strongly to the fact that in many cities the instability of the tax structure has done as much to discourage firms and households from development in the city as any particular characteristic of the tax system.[2]

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[1] An instructive precedent is to be found in the land appreciation tax adopted by the Labor Government in Great Britain. The tax was intended to discourage land speculation, force developable land onto the market, and thereby lower land and housing prices. The tax was levied at a very high rate against appreciation in land values realized through sale. Both in its objectives and its operation it was similar to a land value tax. However, landowners refused to accept the tax as a permanent part of the fiscal system. They withheld their land from sale, while lobbying for cancellation of the tax. The consequences were to lengthen holding periods, decrease the supply of land to the market, and drive up land and housing prices—the exact reverse of legislative intentions. Eventually, the tax was rescinded when the Conservatives returned to power. See Government White Paper, *Land* (London : 1974), and Roy Drewett, "Land Values and Urban Growth," Colston Papers, XXII (1970), pp. 335–357. (It should be noted that land value tax economists in Great Britain generally opposed this land appreciation tax.)

[2] For a persuasive argument that repeated revision of the city's tax code has contributed significantly to instability of the business climate, see Statement of Lennox Moak, at conference, "The Fiscal Future of Philadelphia" (April 1977) ; also, "Statement of the Metropolitan Washington Board of Trade before the Subcommittee on Property Taxation of the District of Columbia Tax Revision Committee" (January 28, 1977).

II. Market Effects of Differential Taxation of Land and Improvements

The principal benefits held forth for the District of Columbia from adoption of the land value tax are stimulation of the District's economic development, together with "rationalization" of its land use patterns and upgrading of its housing stock. These are market effects, hoped to be achieved through the tax's impact on investment decisions. For this reason, a consideration of the market effects of differential taxation is an appropriate starting point in evaluating the land value tax or proposals for abating the tax burden on new investments in real estate improvements.

A tax on land values is generally recommended, as in the District of Columbia, as a replacement for the uniform property tax. The effects of removing the property tax burden on capital improvements must therefore be considered simultaneously with the effects of raising the rate of taxation on land. Abatement programs, in contrast, typically reduce or eliminate the tax burden on specified types of building improvements, without raising the rate of taxation on land.

REMOVING THE TAX ON IMPROVEMENTS

A property tax levied on improvement values raises the user cost of real estate capital. Removal of the tax will lower the cost of using real estate capital and, under most market conditions, will increase the optimal amount of capital development.

The effect of removing the property tax on improvements is illustrated in Figure 1. The initial supply of capital is shown in the figure as the solid line SS. The fact that the SS curve is drawn as a straight horizontal line indicates that over the long run capital improvements will be undertaken by investors as long as the rate of return from such investments equals or exceeds the standard rate of return that can be earned on investments throughout the economy. In economic terms, the long run supply of capital improvements is fully elastic. Should the profitability of capital development temporarily fall below the economy-wide standard rate of return, new investment in real estate capital will slow down, and existing properties will be allowed to deteriorate. Eventually, the cutback in office or housing space will raise market prices enough to restore the competitive rate of return to new investment. Similarly, should the profitability of capital development temporarily exceed the economy wide standard rate of return, new investment will accelerate, boosting capital supply and depressing its market price.

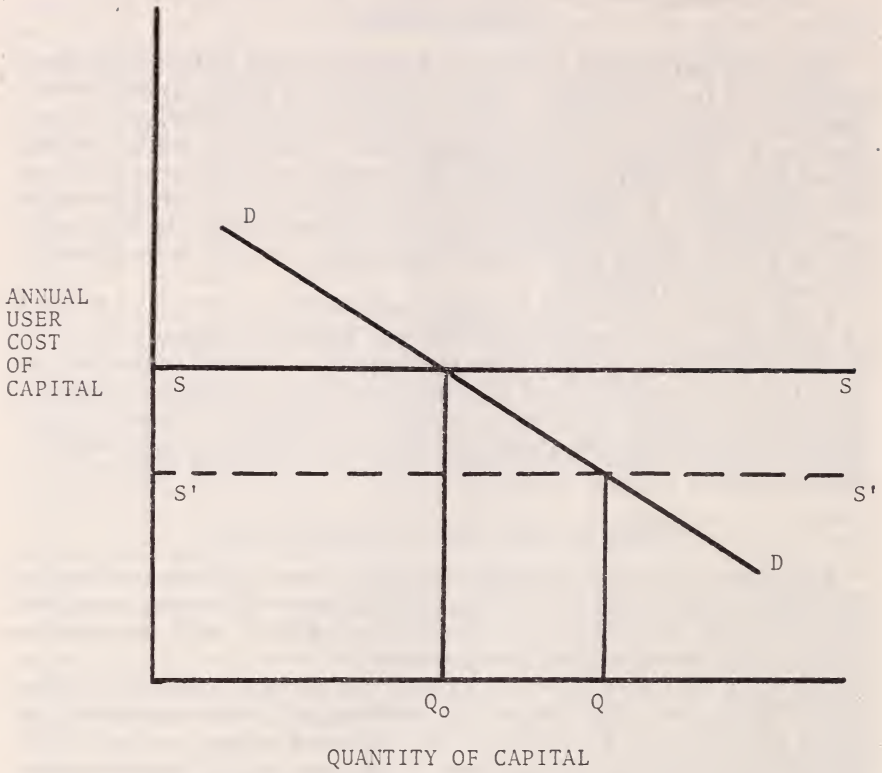

FIGURE 1

Over the short term of course, the durability of real capital and the delays involved in constructing new buildings will prevent the stock of improvements from adjusting fully to market signals. But over any period of years, given a competitive market, market forces will bring the supply of urban real capital into line with the amount that is demanded at the reproduction price. This amount is shown in Figure 1 as Q, the quantity determined by the intersection of the supply and demand curves.

The initial cost of capital shown in Figure 1 includes a tax on improvements at the rate, t. Removal of this tax liability will shift the supply curve downward by the amount, t. This downward shift is shown in the figure by the dashed horizontal curve, S′S′. Capital owners can afford to pass on the full benefit of the tax reduction to the users of real estate facilities, and still earn the same net return as before. Since the standard rate of return to investment in the economy as a whole will be virtually unaffected by the removal of a property tax in a single metropolitan area, potential investors need capture no part of the tax saving to keep local real estate investment opportunities competitive with those available elsewhere. Competition among capital suppliers thus will lower the user price of capital by the full extent of the tax, t, and raise the equilibrium quantity of capital from Q to the new equilibrium, Q_0.

As is evident from Figure 1, the size of the capital investment induced by the removal of the tax on improvements will depend upon two factors: the original magnitude of the tax rate, t, and the slope or elasticity of the demand curve for capital use.[3] This demand curve is shown in Figure 1 as DD. The flatter is the demand curve—i.e., the more sensitive is capital demand to the user price of capital—the greater will be the investment response to and reduction in capital costs, including one occasioned by removal of the tax on improvements.

The elasticity of user demand for capital has to be estimated separately in each sub-market for which an analysis is to be carried out, but some generalizations as to relative magnitudes can be made. The investment impact of removing a given tax on improvements will tend to be greatest when the tax reduction is applied to a small market area.[4] Removal of the tax exclusively within the District of Columbia will have more powerful market effects within the District than elimination of the tax on improvements across the entire metropolitan region; the removal of tax burdens on capital within these neighborhoods of the District will stimulate more investment within these neighborhoods than tax incentives equally applicable to all neighborhoods. The reason for this concentration of effect is that the various sub-markets of a metropolitan region are in constant competition with each other. Any tax incentive that tips the scales of investment competition in favor of a given sub-market not only will stimulate total investment, but will divert some development activity from other locations to the areas favored by tax policy. In terms of Figure 1, the demand for capital in any one market will be more elastic the greater are the possibilities for investment substitution between the market in question and other market areas.

The magnitude of the reduction in the user cost of capital accomplished by removal of the tax on improvements is perhaps best visualized by equating it with an interest rate subsidy of the same size. Elimination of the District of Columbia's present tax rate of 1.83 percent of full market value would be equivalent to a 1.83 percentage point reduction in the real interest rate for financing capital improvements.

The annual costs of using capital to build structures can be divided into four elements: nominal interest rate costs, depreciation costs, property tax burdens, and (a factor tending to reduce user costs) anticipated price inflation.[5] Or,

$$\text{Annual User Cost of Capital} = (i+d+p-r)A$$

where:

i=nominal interest rate;
d=depreciation rate;
p=property tax rate;
r=rate of price inflation;
A=capital value of asset in question.

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[3] The slope of the demand curve determines the absolute magnitude of the increase in the equilibrium capital stock elicited by removal of a given tax rate; the elasticity of the demand curve determines the *relative* change in equilibrium capital stock levels. (i.e., the percentage change.)

[4] Larry L. Orr. "The Incidence of Differential Property Taxes on Urban Housing." National Tax Journal, 21, No. 3 (September, 1968), pp. 253–62; Orr, "The Incidence of Differential Property Taxes: A Response." National Tax Journal, 23, No. 1 (1970), pp. 99–101.

[5] For formal derivations of the user cost of capital, see R. E. Hall and D. W. Jorgenson, "Tax Policy and Investment Behavior." American Economic Review (1967); D. W. Jorgenson, "Capital Theory and Investment Behavior." American Economic Review (May 1968); C. W. Bischoff, "Hypothesis Testing and the Demand for Capital Goods," Review of Economics and Statistics (Aug. 1969).

In recent years, mortgage interest rates for construction projects have averaged between 8 and 12 percent, depending upon the type of project to be financed. Several studies have reported that depreciation rates for buildings lie in the range of 1.5 to 2.5 percent per year.[6] Future price inflation is officially estimated to have an average approximate magnitude of 6 percent per year for the next several years.

Using the mid-points of these figures for illustrative purposes, the property tax share of the costs of capital in the District of Columbia may be estimated as approximately

Property Tax Share of Cost of Capital=

$$\frac{P}{(i+d+p-r)}=\frac{1.8}{(10+2+1.8-6)}=23\%$$

Removal of property tax liability on improvements thus would have the effect of lowering the cost of improvements by somewhere between 20 and 25 percent. Note that, regardless of the quantitative values used for the other components of the user cost of capital, elimination of a 1.8 percent property tax on improvements remains analytically equivalent to a 1.8 percent interest rate subsidy. The anticipated effects, therefore, can be compared to those realized in the past from interest-rate subsidies of comparable size.[7]

A reduction of about 20–25 percent in the annual cost of capital for building investment is best viewed as a marginal subsidy. Its effect on investment levels will depend entirely upon the size of pent-up demand in a particular local market and the sensitivity of demand to moderate price reductions. Figure 2 illustrates two cases where the initial level of capital stock under the original property tax system is the same, but where the effects of a reduction in the cost of capital on future investment levels are quite different. Under situation A, the demand for capital is relatively inelastic; a downward shift in the cost of capital, as indicated by the dashed supply curve, raises the equilibrium quantity of capital only from Q_0 to Q^*. Under these market conditions, the untaxing of building improvements would have relatively little investment effect. In contrast, under situation B, the volume of potentially profitable investments is much larger; the same reduction in the cost of capital prompts an expansion of the capital stock from Q_0 to Q^{**}.

Figure 3 illustrates yet another situation, where the untaxing of improvements has no effect at all on investment levels. The figure corresponds to the investment situation found in many poorer neighborhoods, where there is virtually no investment activity and no investment would be forthcoming, even at moderate subsidy levels. The market demand for capital services—whether for housing or retail

[6] For estimates in this range, see Charles R. Huston and Frank C. Wykoff, "Preliminary Evidence on Economic Depreciation of Structures," (Paper prepared for the Office of Tax Analysis, Department of Treasure, July, 1975); Paul Taubman and Rober Rasche, "The Income Tax and Real Estate Investment," in Tax Institute of America, Tax Incentives (Lexington, Mass.: D.C. Health, 1971) and George E. Peterson, Federal Tax Policy and Urban Development (Washington, D.C.: The Urban Institute, forthcoming, 1977).

[7] Section 312 rehabilitation loans, for example, lower the interest cost of home repair loans from 12 percent to 3 percent. This effect on the cost of capital thus is approximately five times as great as the effect of removal of the tax on improvements.

space—is sufficiently depressed that investment costs cannot be recovered on the private market, unless these costs are drastically slashed. As shown in the figure, no investment at all will take place, unless the cost of capital is lowered more substantially than can be accomplished by removal of the property tax. In such neighborhoods, net disinvestment is likely to be occurring, as existing properties are allowed to depreciate because of lack of demand for maintenance or upgrading.

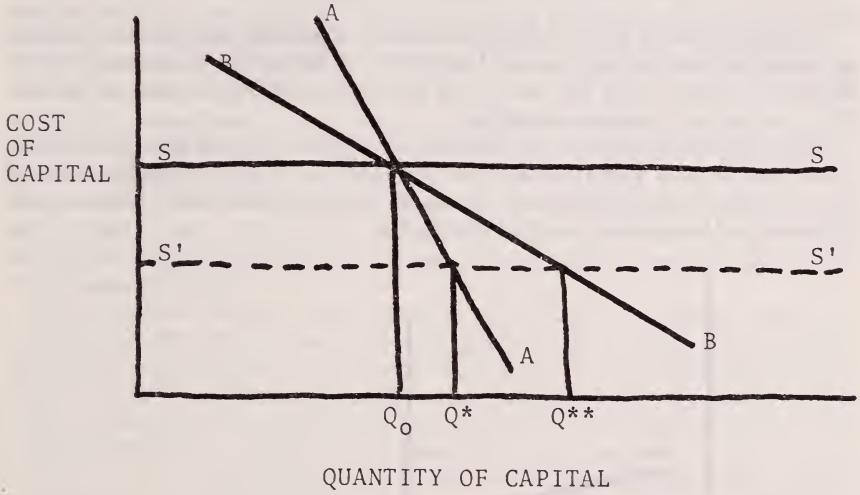

FIGURE 2.—Responsiveness of capital investment to tax reduction under alternative demand conditions.

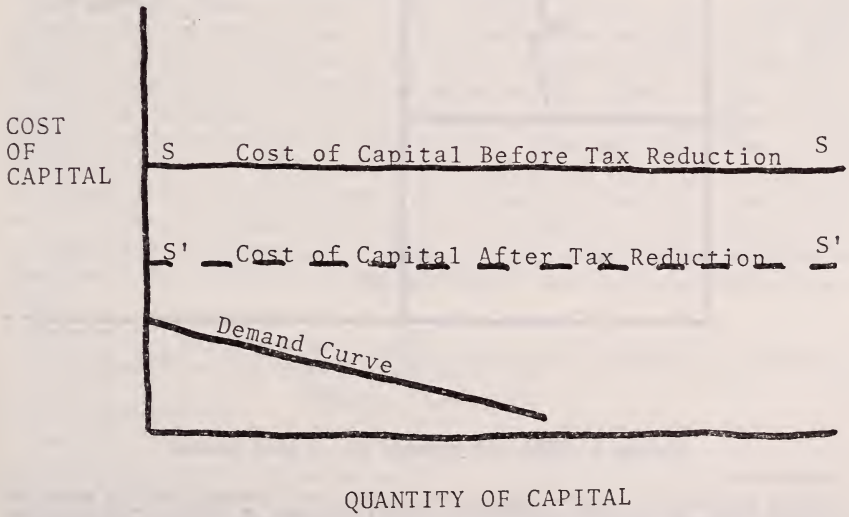

FIGURE 3.—Lack of investment effect from reduction of tax on improvements.

Because the investment response to a reduction in the cost of capital is so sensitive to the particulars of the local demand situation, empirical studies from one market are of little specific value of indicating what might happen if the tax on improvements were removed under a different set of market conditions. At best, these are helpful in etsablishing an order of magnitude of effect, based on roughly comparable experience elsewhere.

MARKET EFFECTS OF A LAND-VALUE TAX

In contrast to a tax on improvements, a tax on land values creates no price incentives for changed investment behavior. Classical writers lauded the land value tax above all for its neutrality, or lack of investment impact on private markets.[8]

Figure 4 illustrates the traditional analysis of the effect of imposing a land value tax. The total amount of land in an urban jurisdiction is, to a very good approximation, fixed. In Figure 4 this fixed land supply is shown as the vertical supply curve, SS.

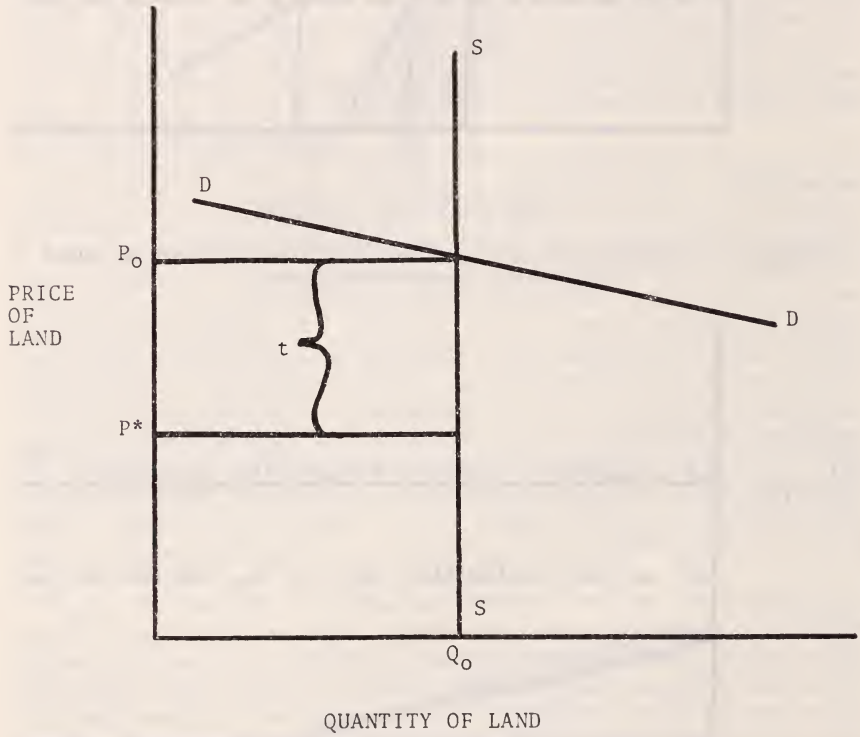

FIGURE 4.—Effect of property tax on land values.

[8] "Both ground-rents and the ordinary rent of land are a species of revenue which the owner, in many cases, enjoys without any care or attention of his own. Though a part of this revenue should be taken from him in order to defray the expenses of the state, no discouragement will thereby be given to any sort of industry. The annual produce of the land and labor of the society, the real wealth and revenue of the great body of the people, might be the same after such a tax as before. Ground-rents, and the ordinary rent of land, are, therefore, perhaps, the species of revenue which can best bear to have a peculiar tax imposed upon them." Adam Smith, "The Wealth of Nations" (pp. 795–6, Modern Library edition).

Under these conditions the imposition of a land value tax, t, will have no effect either on the amount of land supplied (and developed) or on the total price paid for land by developers. The only effect of the tax is to determine that part of the land "price" which is now paid to the government in the form of an annual tax, rather than paid to the seller in the form of direct compensation. The annual cost of the land to the developer—and hence its "price" in economic terms—is unchanged at P_o, as the result of the tax. However, the annual land rent received by the owner is diminished by the amount of the tax burden, to the level (P_o-t). The tax burden falling on the landowner also will be capitalized into a lower market value for the land.[9]

Although the profitability of capital investment is not affected by the tax on land values, the income effects of the tax change are likely to trigger investment responses. Not all landowners are economically rational agents actively seeking to maximize profits. Through inattention or indolence some landowners will have failed to develop their sites to take full advantage of profit opportunities. Others will have deliberately used land sites to maximize their personal enjoyment, subject to family income limitations, rather than to extract the maximum possible profit.

A tax on land values raises the cost of failing to develop properties in line with market signals. The magnitude of the tax burden is established by the potential for profit that exists by developing the land parcel to its "highest and best"—i.e., profit-maximizing—use. This profit potential determines the market value of land, which is the basis for taxation. Owners who have failed to respond to the market incentives for development will find themselves saddled with higher tax bills as a result of the change in tax base. The higher tax bills, in turn, will place pressure on the owner, tending to force him to develop his property in conformity with market signals.

The income effects of land value taxation, like the price effects of untaxing improvements, need to be investigated separately for each market area. However, some generalizations are possible regarding the relative magnitude of investment impacts. The effects of land value taxation on investment behavior will be greater (1) the larger is the discrepancy between current development uses and those that would maximize private market profits and (2) the lower is the income of the owners holding sub-optimally developed land parcels. A land value tax will place the most severe squeeze on relatively poor owners, who are least able to withstand the higher out-of-pocket costs that must be absorbed if their property is not developed according to profit potential.[10]

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[9] If the net annual rent that can be earned from optimal development of a land parcel is R, the market price of land, without the land tax, will be

$\frac{R}{i}$ (where i is the interest rate)

and will be

$\frac{R}{i+p}$ with the tax, where p is the property tax rate.

The market price of land thus will be lowered by the ratio $\frac{P}{i+p}$, by adoption of a land value tax.

[10] In economic terms, the declining marginal utility of money will insure that the increased tax burden on a sub-optimally developed property is felt more severely by a low income owner than by a more affluent owner of the same property. The likelihood that the owner will respond to the increased tax burden by developing his property, or by selling it to others who will develop it in line with market signals, is correspondingly greater.

The untaxing of improvements and the taxing of land values thus work to reinforce each other in stimulating capital investment. The former measure raises the profitability of capital improvements; the latter adds the "stick" of higher out-of-pocket costs for landowners who fail to undertake the profit-maximizing development of their parcels.

The theoretical preference for a land value tax over a tax on improvements is grounded on the distinction between the former's preservation and reinforcement of private market's incentives and the latter's alteration of these incentives. However, land and housing markets are so rife with externalities that the presumption in favor of a pure market outcome is a relatively weak one. The type of structure built at a given location and the condition of its maintenance, will influence neighborhood property values, traffic levels, air quality, and many other public outcomes. A great number of public measures, from zoning rules to rent control, from rehabilitation subsidies to freezes on condominium conversions, are designed explicitly to influence the operation of urban real estate markets. The multiplicity of public influences makes it extremely difficult to argue that imposition of a land value tax truly would duplicate the outcome of a pure private market process, or that the private market solution represents the best possible form or urban development.

For these reasons, a land value tax ought to be adopted, if at all, because its development effects are independently judged to be desirable, not because of an incomplete theoretical argument that it would more closely approximate the free market outcome.[11]

SPECULATION AND THE TIMING OF URBAN DEVELOPMENT AND REDEVELOPMENT

No market is more influenced by the adoption of land value taxation than the speculative market in land development. At present, property owners often find it profitable to withhold centrally-located land from development, in order to benefit from future price appreciation. Land being held for speculative purposes may be left completely vacant or devoted to low intensity uses, such as parking lots, which generate current income while leaving open the owner's future development options.

Although land "speculation" has become a pejorative term, there generally are good economic reasons for delaying new construction. A temporary glut of office space may make it economically unprofitable to add to office supply at the present time, even though such development will again become profitable once the excess space is absorbed. In this case, it is economically efficient to postpone new office starts. If demand for rehabilitated housing in a particular neighborhood is projected to grow rapidly in the future, it may well represent a sound economic decision to postpone rehabilitation of properties there until the demand manifests itself, rather than carry out such rehabilitation in advance. In short, there is an economic market in the timing of development, just as there is a market in other aspects of the development

[11] It is a generally proved proposition of economic theory that as long as other factors prevent the pure private market outcome from being realized, partial moves toward the private market solution cannot be presumed to be beneficial, even on the narrow grounds of economic efficiency.

process. The fact that properties are not presently developed to their full potential does not automatically mean that they are underutilized in an economic sense.

Advocates of land value taxation stress the fact that a tax on land values will tend to discourage the speculative withholding of land from development. The tax burden imposed on land adds to its annual carrying costs. Conversion to land value taxation in the District of Columbia, if it were to generate the same total tax revenue as the present property tax system, would require a tax rate of approximately 4.5 percent instead of the present 1.83 percent rate. For speculative withholding of land for future development to be economically profitable, land values must increase by at least the annual rate

$$(i + p)$$

where i is the interest rate and p the rate of taxation on undeveloped land. As the magnitude of the tax rate, p, increases, the rate of return needed from land withholding will also increase, pushing a greater share of developable land into current development. Applying the illustrative interest rate of 9 percent used in the last section, a land value tax in the District of Columbia would raise the break-even appreciation rate for profitable land speculation from 10.8 percent per year to 14.5 percent.[12] Adoption of a land value tax thus will tend to substitute present site development for future development.

Whether it is socially beneficial to foreshorten the development process in this fashion is a separate question. There is some irony in the fact that the land value tax, which on all other counts is praised by proponents for reinforcing private market incentives, is lauded for *changing* the operation of the market in development timing, by creating tax pressure for current development. At the metropolitan scale, there may be a social augment for speeding up the private market's infill process, in that development patterns that leave "holes" of undeveloped space are likely to impose higher public capital infrastructure costs, since roads, sewer and water lines, etc. must traverse the unoccupied land area. There is some presumption that on an urban wide scale compact development reduces public sector costs.[13] These considerations do not apply within the central city itself, however, where capital networks already have been installed.

Advocates of land-value taxation sometimes hold that the private market in development timing requires public intervention because it is particularly subject to abuse. A few large landowners may withhold their land from development, thereby creating an artificial scarcity of developable property and driving up land and development prices. If successful at this market manipulation, owners of centrally-located land could reap excess profits from land withholding, while forcing urban development to move toward the fringe of the urban area. A land value tax would simultaneously increase pressure on such owners to develop their properties and capture a somewhat greater share of the land-price appreciation for the public sector.

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[12] The cash flow from low density land uses, such as parking lots, can defray the carry costs of land speculation, of course.

[13] See Thomas A. Muller and George E. Peterson, "The Economic and Fiscal Costs of Alternative Urban Development Patterns" (Washington, D.C.: The Urban Institute, Working Paper 5049–17, 1976).

The extent of speculative land withholding must be judged separately in each urban market. Some critics have attributed the lack of vigorous redevelopment in the old central business district of the District of Columbia, the F-Street Corridor, Furniture Row, and adjoining space, to speculation by owners in anticipation of land-price increases.[14]

Whatever force this argument may have as an historical explanation of the migration of the downtown business district, recent land-price trends in this part of the city would make it improbable that speculative withholding of land is currently an important obstacle to development. Where land prices in this submarket have risen at all, they have failed to keep pace with land holding costs, and appear unlikely to perform better in the future. A lack of business demand for new capital development (as indicated by the closing of several major stores) seems to be at the root of the laggard investment rate rather than any refusal on the part of landowners to make space available from current development.

III. The Development Effects of a Land-Value Tax in the District of Columbia

The resources committeed to this study do not permit original empirical estimates of the elasticity of demand for capital investment in the various neighborhoods of the District of Columbia. Indeed, it is doubtful whether planning studies of any size could greatly narrow the range of uncertainty about the magnitude of investment response to a change in the tax base.

The relative pattern of investment response can be sketched, however, from generally available information. In sumarizing the probable development impacts, it is helpful to look first at different types of neighborhoods and then to examine the overall effect on the shape of development in the District of Columbia and on the composition of the District's population.

NEW BUSINESS DISTRICT

The absolute size of the investment response to land value taxation would be greatest in the central business district. If there were no other constraints on development, the conversion to land value taxation would lead to further intensification of development in the new office core of the District and at other commercial and retail "hot spots." The incentive to higher density development resulting from the untaxing of improvements would be supplemented by the site value tax's wealth effects, which would tend to push undeveloped land near the central zone into developed use. Together these forces would tend to produce more compact and higher density commercial districts.

Under the present regulations governing development in the District of Columbia, the market incentives for high-density development provided by the land-value tax would be partially frustrated.

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[14] See statement of League for Urban Land Conservation before Subcommittee on Property Taxation of the District of Columbia Tax Revision Commission (Jan. 28, 1977).

The District's height limitations severly limit the density of development in areas of commercial office construction. Since virtually all new central office buildings are built to the maximum allowable height, the incentives created by the tax system for higher density development could not be translated into actual investment increases on given development sites. Rather, the investment demand stimulated by the tax change would cause more rapid infill of vacant sites and accelerated expansion of the urban core onto peripheral areas, like the West End.

Although District authorities have recommended relaxation of the height limitation, there is little short-term prospect that Congress will concur in this recommendation.[15] The advisability of land-value taxation, from the point of view of its development effects on the new commercial core, then turns on the desirability of accelerating the extension of office construction along the K Street corridor and into surrounding areas.

The recent history of planning for development of the West End implies that the spread of the new commercial core into this area is not desired. The zoning rules adopted for the West End in 1974 incorporate most of the recommendations of the report entitled "A New Town for the West End," prepared by the District of Columbia Office of Planning and Management. The zoning regulations establish the West End as a "CR" district. The primary objectives of this zoning classification are:

> Reduction of the office potential of existing commercial zoning to discourage exclusively office precincts that are used only eight hours a day.
>
> Encourage residential use of commercial land by allowing a higher development level for residential than for commercial construction.[16]

In a word, the objectives of the planning and zoning efforts have been to constrain the operation of the free market, which it was feared would cause the West End to be overdeveloped with office buildings. These objectives are just the opposite of those that would be implicit in the adoption of land-value taxation, which would *reinforce* existing market incentives to devote the area to office construction, the profit-maximizing use for the land.

It is not the purpose of this paper to judge the relative values of different planning objectives for the District's neighborhoods. However, it is essential to the successful implementation of the land-value tax that it reinforce agreed-upon development purposes, and not work at cross purposes with the height limitation on new office construction or against mixed commercial residential planning goals in an area like the West End.

OLDER COMMERCIAL AND INDUSTRIAL ZONES

In most of the older commercial and industrial zones of the city, the desirability of commercial redevelopment is unchallenged. The ques-

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[15] For a historical account of the evolution of height limitations, and some flavor of the controversy as well as Congressional opposition to relaxation of height restrictions, see "Building Height Limitations" (Staff Report for the Committee on the District of Columbia, House of Representatives, April 1976) and Impediments to the "Economic, Functional, and Aesthetic Development of the District of Columbia" (Staff Report, December, 1976)

[16] "D.C. Economic Activity Report " (Management and Planning Office, May 1977) p. 8.

tion to be asked is: "How greatly would the adoption of land-value taxation further these goals?"

The Original Downtown area, between the Capitol and the White House, is now the focus of numerous revitalization plans. Much of the planned (or consummated) investment is to be carried out by the public sector, and thus unresponsive to considerations of the property tax burden. The Pennsylvania Avenue Plan is largely a Congressionally funded development effort. The principal additions of office space (FBI and Labor) have been federal government buildings, complemented by the completion of the new D.C. Court building at Judiciary Square. Still in the planning stage, besides the Pennsylvania Avenue project, are the initial phase of the downtown campus of the University of the District of Columbia and the Civic Center.

Adoption of land-value taxation in this area, even if successful in promoting private-sector development, would be premature at this time, until the outlines of the major public capital development projects become clearer. Once these items of public investment have been installed, or a clear commitment to their development has been made, it would be in the public interest to promote complementary development of the remaining land by the private sector. But the timing and character of private sector investment has to be consistent with public development plans.

The New York Avenue Industrial Corridor exemplifies a declining industrial area that clearly would benefit from rejuvenation of its industrial plant. The area holds almost 40 percent of all industrially zoned land in the District, but has been suffering plant abandonments and deterioration.

Such an area offers the potential for a test case of the efficacy of land value taxation in stimulating redevelopment. As noted previously, the limitation of land value taxation to a relatively small market area should enhance its investment impact, as the area in question will gain attractiveness relative to completing locations elsewhere in the metropolitan area. Completion of the New York Avenue industrial corridor study is scheduled by the end of 1978. Consideration could be given to the use of land-value taxation as a complementary planning tool for this corridor. If adopted, the land value tax could be monitored for its several effects, thus providing valuable information regarding its potential impacts if adopted on a larger scale.

TRANSITIONAL RESIDENTIAL NEIGHBORHOODS

The relative impact of the land value tax is likely to be greatest in those residential neighborhoods already experiencing rapid redevelopment, rehabilitation, and population turnover. Even under the current property tax system, less affluent homeowners in Adams-Morgan, Capitol Hill, or the 16th street corridor report themselves greatly burdened by the reassessments that continually raise their property tax bills. Small businesses in these regions likewise have felt the pressure of increased property tax burdens. Many owners have been forced to sell their properties to make way for new and wealthier buyers who will upgrade the residential buildings or erect new commercial facilities. Conversion to land value taxation would intensity the tax

pressure on these properties, as the lower income residents of neighborhoods in great market demand typically occupy properties with high land to improvement value ratios. In fact, the market value of these properties often is based on their redevelopment or upgrading for a different class of buyer. By the standards of the market place, unrehabilitated housing and small commercial establishments do not represent the "highest and best use" of urban locations for which there is vigorous market demand. Land values are determined by the profitability a site would produce when developed according to its highest and best use. Consequently, all sites that presently are underutilized, by market standards, would have their tax liability increased under the conversion to land value taxation. The strain of the greater tax load will tend to force the owner either to redevelop high land or, if he cannot afford to do so, to sell his property to another owner who will undertaken further development in line with market rewards.

The redevelopment of transitional neighborhoods undoubtedly poses one of the most severe policy dilemmas for public authorities. As long as one focuses on the physical structures involved in neighborhood transformation, the effects are likely to appear undilutedly beneficial. Deteriorated homes and rundown commercial buildings are replaced by better quality new structures. In the process, the city's tax base is strengthened and the demand for many social services reduced. Neighborhood renewal consequently serves the basic economic aims of a city.

If one looks at the owners and occupants of poorer quality structures, rather than at the buildings themselves, however, enthusiasm for accelerating neighborhood redevelopment through the private market is tempered. In neighborhoods experiencing a high volume of private investment, a land value tax would exert great pressure on holdout properties that have not been renovated or replaced. When these are owned by persons of low or moderate income, the increased tax burden is likely to force the owners to sell their properties to new owners who can better afford redevelopment.

Of course, the homeowner or owner of business property who sells under these conditions stands to realize a significant capital gain which will ease the process of relocation. The greatest burden falls upon renters in transitional neighborhoods who receive no equivalent compensation when displaced by the upgrading of properties for a more affluent market. There is also a broader social question of whether public authorities want to encourage faster turnover of entire neighborhoods to professional households and other re-entering the city.

Reinforcement of market pressures through adoption of the land value tax would tend to accelerate the process of neighborhood turnover. Under a land value tax, it is especially difficult for transitional neighborhoods to retain mixed quality housing—renovated housing occupied by middle or upper income owners side-by-side with poorer quality housing occupied by low income owners and renters. The tax burden imposed upon the latter group of properties makes it difficult for them to survive. The land value tax thus becomes a strong force for neighborhood homegeneity, promoting quicker adjustment to the private market's profit signals and accelerating the socioeconomic change in neighborhood composition that accompanies substantial property investment. As long as there is strong underlying market demand

for central city housing rehabilitation as there is in the District of Columbia, the tax will tend to restrict the overall central city supply of housing for low income households, as well.[17]

Public authorities must decide in each case whether the benefits of faster and more extensive redevelopment in line with private market rewards warrant the extra burden that a land value tax would place upon low income property owners in redeveloping neighborhoods.

STABLE RESIDENTIAL NEIGHBORHOODS

In neighborhoods where there is not the acute market pressure found in transitional neighborhoods (and the former, of course, account for the great majority of the District's population), adoption of a land-value tax would promote marginal housing investment—minor upgrading and expansion of the existing housing stock—rather than its total transformation through rehabilitation or replacement. In these areas, the untaxing of improvements would predominate as the principal market incentive rather than the increased tax pressure placed on land values.

LOW-INCOME NEIGHBORHOODS

The evidence reviewed in the next section from other cities establishes beyond much question that property tax abatements, and by extension adoption of land value taxation, can do very little to stimulate investment in the residential housing stock of most poverty neighborhoods. In these neighborhoods, the effective constraint on housing investment is the low demand for improved (and more expensive) structures. As was true of the case illustrated in Figure 3, moderate reductions in the cost of capital, achieved by removing the tax from improvements, are likely to have next to no effect on investment levels.

THE OVERALL SHAPE OF URBAN DEVELOPMENT

When imposed on a metropolitan scale, the land value tax encourages contraction of the urbanized area. The higher density development near the central core, stimulated by the untaxing of capital improvements, diminishes demand for residential and commercial development at more remote sites near the urban fringe. A more compact urban development pattern is likewise encouraged by the infill development that results from reduced withholding of undeveloped land parcels for speculative purposes.

These considerations carry little weight when evaluated a land value tax that would be applied within the District of Columbia alone. It is true that the more attractive terms on which capital investment can be carried out within the central city will divert some capital development from suburban locations. But within the District itself no diversion of investment from the outer neighborhoods is likely to be observed. All parts of the city will enjoy a comparative cost advantage

[17] The effect of land value taxation on the supply of low income housing is a special concern to many proponents of the land value tax. See, for example, questioning by Rep. Henry S. Reuss in session, "Reforming Local Taxation As an Aid to Municipal Finance," *The Rebirth of the American City*, Hearings before the Committee on Banking, Currency and Housing of the House of Representatives (Washington, D.C.: GPO, 1976) Vol. II, pp. 727 ff.

over locations in the rest of the metropolitan area, and so should benefit from some degree of greater investment activity.

INCOME COMPOSITION OF THE DISTRICT

The process of untaxing improvements, like the process of raising land tax burdens in transitional neighborhoods, will tend to encourage entrance of middle-class and more affluent populations into the District. Under the proposed tax revision the District would stand along in failing to tax capital improvements. The households to whom this tax exemption is most valuable are those who normally would invest in large amounts of real estate capital. The more affluent households who plan large capital expenditures will find their relative bidding position improved for every undeveloped single family homesite and every single family home in need of substantial repair or upgrading. The untaxing of improvements lowers the price of all housing improvements, but this price reduction carriers the greatest value for those households who normally would spend heavily on real estate capital. The geographically constrained nature of the "sale" on housing capital will attract to the District those who can take best advantage of it.

SUMMARY

This section should highlight the fact that reinforcement of private market incentives is likely to be consistent with public objectives in certain housing markets, but at odds with public objectives in other sub-markets. This suggests that, at least as a first step, it might be preferable to utilize the land-value tax as a complementary tool for a specific development zone, where reinforcement of private market incentives was clearly intended. The application of land value taxation to restricted areas of this sort might raise equity (or even legal) questions, but it would have the advantage of providing a controlled opportunity for observation of market effects, while public authorities could be secure that the taxing method was consistent with other development tools being used.

IV. Empirical Evidence on Market Effects

Since no jurisdiction in the United States has adopted a system of land value taxation, it is fruitless to look at U.S. experience for a precise indication of what to anticipate from such a changeover in the tax system.

Instead, indirect evidence must be sought. Within the United States, many jurisdictions have acted to exempt new construction from property tax liability. These efforts provide a reference point for judging the stimulative effect that tax revisions would have upon investment levels. Like a conversion to land value taxation, these tax incentives "untax" new investment in capital improvements. Other jurisdictions in the United States have adopted general policies of assessing capital improvements at a lesser proportion of market value than land. Their experience, too, offers a glimpse of what might be expected to happen if further moves were made to eliminate tax liability on improvements

altogether. The experience accumulated elsewhere sheds direct light on some of the proposals for partial differentiation of the property tax system. The usefulness of this experience for evaluating the effects of a full scale conversion to land value taxation is more problematic: though the reforms enacted share some of the characteristics of land value taxation, there are also important differences.

Outside the United States, several major cities do administer land value taxation. Unfortunately, the markets faced by each differ substantially from those encountered in the District of Columbia—all of the major cities where land value taxation is used are younger and growing more rapidly than the District. This fact sharply limits the possibility of useful comparisons, though some reading of the foreign experience is appropriate.

None of these market situations is closely parallel to that which would result in the District from a conversion from the uniform property tax to a tax on land values alone. Most of the abatement plans lack the "stick" of higher land tax burdens to accompany the "carrot" of greater profit incentives from investment. As a consequence, different observers are likely to extract different lessons from the empirical record.

REHABILITATION OF OLDER HOUSING

No claim for land value taxation has been made so frequently or so energetically as the claim that untaxing buildings would help revitalize the older housing stock of urban areas.[18] This argument is based upon two propositions: first, that the present property tax system actively discourages housing owners from repairing or upgrading their properties, because of their fear of reassessment, and, secondly, that the present tax system strings out the life of old, worn-out buildings, whereas a tax on land values would promote their replacement through new construction.

Systematic empirical examinations of the deterrent effect of property tax reassessments on housing rehabilitation have failed to uncover more than a modest impact.[19]

In most cities, small-scale improvements have been unlikely to lead to reassessment, and when reassessments do occur it is with considerable delay. Large-scale upgrading of properties is far more likely to trigger reassessment, but in no markets do property owners rank property tax reassessment as a major obstacle to building improvement. In low income neighborhoods, the dominant considerations limiting investment in the housing stock are, first, the lack of demand for better quality, higher-cost structures and the consequent inability to earn an economic return on investment through higher market prices or higher rents and, secondly, cash flow and borrowing constraints which limit the owner's access to investment funds. Of 147 older properties in "blighted" or "downward transitional" neighborhoods

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[18] See, for example, Mary Rawson, "Property Taxation and Urban Development" (Washington, D.C.: Urban Land Institute, 1961); Walter Rybeck, "How the Property Tax Can Be Modernized to Encourage Housing Construction, Rehabilitation and Repair" (Washington, D.C.: The Urban Institute, Working Paper 112-13, 1969; Netzer," Impact of the Property Tax," op. cit; Mason Gaffney, "Land Planning and the Property Tax," American Institute of Planners Journal (May, 1969).

[19] George E. Peterson, "The Property Tax and Low Income Housing Markets," in Peterson, Property Tax Reform (Washington, D.C.: The Urban Institute, 1973); George E. Peterson, Arthur P. Solomon, William C. Apgar, Jr., and Hadi Madjid, "Property Taxes, Housing and the Cities" (Lexington, Mass.: D.C. Heath, 1973).

in 10 cities examined in a HUD-sponsored interview survey in only five cases was property tax reassessment cited as the most important obstacle to rehabilitation.[20] Property tax considerations play a somewhat larger role in investment decisions in "stable" and "upward transitional" neighborhoods, where the profitability of investment is more sensitive to marginal cost factors, but even here reassessment ranks far below financing availability as in investment constraint.

In brief, direct investigation of the reasons property owners give for failing to undertake property rehabilitation as well as analysis of their actual investment behavior, suggest that the deterrent effects of the current property tax system are modest, especially in low income neighborhoods. The property tax is a bigger factor in relatively affluent or redeveloping neighborhoods than it is elsewhere, but in most places it seems to be a secondary consideration in investment decisions. It needs to be stressed, of course, that the discouragement to investment is a function of the size of the property tax burden. In cities with exceptionally high property tax rates, tax liability will be of far more importance than it is in areas with relatively light tax burdens.

A second body of evidence to be utilized in appraising the role of property taxation in investment decisions is the record accumulated elsewhere by tax incentive programs designed to stimulate housing rehabilitation. We now have enough policy experience to make a preliminary judgment about the effectiveness of tax abatement as a means of stimulating repair of older housing stock.[21]

In 1969 Ohio passed a law providing for deferment of reassessment on rehabilitation and new construction in neighborhoods designated by a municipality as "rehabilitation areas." Deferment is allowed for five years on improvements within a specified range of value and for ten years on new housing—i.e., for these periods the marginal rate of taxation on the improvement is zero. However, Ohio's legislation contains restrictive requirements intended to ensure that low income residents benefit from the tax reduction. For a building to qualify for tax abatement at least half its residents must have lived in rehabilitation areas at some time in the past five years. The legislation also calls for the creation of a landlord-tenant housing committee having supervisory power over the building's operation. Apparently, these requirements are too stringent to make the tax reduction an attractive incentive. Although Ohio's law was passed in 1969, no qualifying housing had been constructed as of mid-1974.

Indiana allows tax exemption for five years on rehabilitation carried out to dwellings having an initial assessed valuation below a specified maximum. The exemption applies to improvements of up to $10,000 in market value on single family homes which have an initial value of less than $12,000. Improvements of lesser value per unit are allowed on multi-family buildings. As the law has been implemented in Indiana's most populous county (Marion County, the seat on Indianapolis), property owners must complete their improvements, undergo reassess-

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[20] Peterson, Solomon, Apgar and Madjid. "Property Taxes, Housing and the Cities," pp. 32–34.

[21] The following summary draws upon the author's testimony before the House Banking, Currency and Housing Committee, "Rebirth of the City" (Washington, D.C.: GPO, 1976) Vol. II, pp. 727 ff.

ment, and then apply for an exemption from the County Auditor. The County Auditor indicated that far fewer applications have been received than anticipated—"less than a dozen per year." The law was amended in 1972 to include commercial properties, and most of the limited number of applications have been from commercial establishments.

Pennsylvania adopted enabling legislation in 1971 permitting the passage of local ordinances providing tax exemptions for housing improvements. The City of Philadelphia passed such an ordinance in 1974. It granted tax exemptions for improvements of up to $10,000 made to deteriorated neighborhoods. Qualifying properties must have an initial assessed valuation of less than $10,000 per unit (Philadelphia assesses at approximately 60 percent of market value). The exemption if for 100 percent of improvement value in the first year, declining by 20 percent each year until the sixth year when the exemption terminates. As of this writing, no practical experience has been acquired with Philadelphia's program. Ironically, the only public reaction has been neighborhood opposition to being designated "deteriorated." Neighborhood leaders have expressed fear that this label will dissuade would-be buyers from purchasing properties and discourage banks from making loans. The depressing effects of these actions is thought to greatly outweigh the benefits of tax abatement.

The City of Pittsburgh has granted tax exemptions for improvements of up to $10,000 since the beginning of 1973. The exemption is available to all dwelling units regardless of type or condition but is applicable to city taxes only. County and school district taxes are not included. In the first year of the program's operation, twenty applications were filed, of which only two were for properties in blighted areas. The city's Housing Coordinator attributes the low participation rate in part to a lack of knowledge about the program and to a general preference for keeping the assessor away by making internal improvements and repairs without permits, as well as to the relatively low economic rewards of the property tax abatement. The meager investment response to property tax exemptions can be contrasted with the much more vigorous response in Pittsburgh to subsidized 3 percent home repair loans. Approximately 1,000 homeowners with incomes below $15,000 per year took advantage of this program in the first year of operation, investing a total of five to six million dollars in improvements. This far greater investment response is consistent with the relative magnitudes of subsidy. While the interest rate program reduces the cost of capital by 9 percentage points (reducing rehabilitation loan rates from 12 percent to 3 percent), the property tax abatement merely eliminates an annual tax burden of approximately 1.5 percent.

Wilmington, Delaware adopted a tax exemption and abatement program for all new construction and improvements made during the period 1973 to 1975. For new construction tax exemption declined from 100 percent in the first year to 90 percent in the second year, proceeding by 10 percent decrements until the full tax was to be paid in the eleventh year. For improvements to existing properties a five-year assess reduction equal to 150 percent of improvement value was granted. Not only was the full improvement value exempted from

property taxation, but the existing assessed valuation of a property for tax purposes was reduced by 50 percent of the improvement value. Local officials stated that the intent of the program was primarily to encourage commercial and industrial investment in the city. During the first fifteen months of the program, 53 applications and abatement were received, on construction valued at approximately $5.5 million. All except $250,000 of this amount was for new construction, largely of commercial and industrial property. Of the $250,000 in rehabilitation investment the majority was undertaken on commercial structures.

A random sample of fifty property owners in Providence, Rhode Island, who took advantage of that city's five year tax abatement on housing improvements found only two who reported that they would not have undertaken the same improvements in the absence of a tax subsidy; seven others stated that they had accelerated the timing of their rehabilitation in order to qualify for the exemption. Otherwise, the owners simply used the tax exemption to reduce the property tax liability on improvements which they would have carried out in any event.

Portland, Oregon recently introduced a comparable 5 year tax abatement program for rehabilitation of residential housing. Although the program was designed to stimulate investment, local authorities report that it has been a "distinct disappointment." In the first year of operation fewer than 15 properties enrolled under the program.

From the above record, it seems clear that no major transformation of the cities' older housing stock, at least in low income areas, can be expected from property tax abatements. True, in each case the success of a program may have been impeded by local particulars. In Pittsburgh and Indiana little publicity was given to the possibility of tax exemption. In Ohio there are exceedingly strict requirements regarding the manner in which an owner can use a rental property which benefits from tax exemption. Most importantly, many of the tax exemptions are limited to improvements made to deteriorated properties in deteriorated neighborhoods. Such structures are unlikely to be at the margin where they would benefit from small changes in the rate of return to investment. Typically they require deeper public support for rehabilitation to become a profitable enterprise. Even with these caveats, however, it is fair to conclude that the experience to date indicates that property tax exemption is not an important tool for renovating the poorer portion of the urban housing stock.

Probably the best known property tax incentive plan is New York City's. Seven authors have cited New York's experience as evidence that, if used skillfully, tax reductions can attract significant investment into the standing housing stock. It, therefore, seems important to clarify just what can, and cannot, be concluded from New York's history. The New York program is more accurately described as a large-scale subsidy for rehabilitation than as property tax abatement. As part of the encouragement to investment in rent-controlled units, New York has provided exemption from local property taxes for a period of twelve years on the value of certified improvements. However, this is a relatively minor portion of the benefits which an investor

obtains. He may, in addition, reduce his existing tax liability by 90 percent of the cost of an improvement, spread over a period of years. For example, if a landlord undertakes a $10,000 improvement, in addition to not being taxed on the increment to the parcel's value, he may reduce his existing property tax liability by $833 per year for almost eleven years, or until the total of his tax reduction reaches 90 percent of the improvement's cost. Given New York City's recent property tax rate, the owner of a building worth $50,000 could wipe out his entire property tax obligation for eleven years by making a $20,000 improvement to his property. On top of this, most improvements which qualify for tax exemption in New York City have in the past qualified for reduced-rate municipal loans. In fact, most of the improvements which can be certified for tax exemption consists of investments undertaken to remove code or other legal violations. Hence, failure to make the subsidized investment also renders the owner vulnerable to legal prosecution.

Given the welter of bureaucratic provisions which surround the investment decision in New York City, all of which conspire to lower the cost to the landlord of making improvements, or threaten legal action in case he fails to make such improvements, it is impossible to ascertain how important a stimulus to rehabilitation is the single factor of property tax abatement. Admittedly, the combined effect of the various incentive programs has been impressive. For the twelve years ending March 1972 some 219,000 of New York's residential units were rehabilitated under the incentive program, at a cost of approximately $220 million. An additional $37 million of certified improvements were made between March 1972 and March 1973. Although these figures are modest in relation to the entire New York City housing stock, they are significant compared to the volume of private housing investment in the city.

According to one estimate, however, in order to achieve the first $220 million of rehabilitation investment, New York City will have to pay out more than $275 million in property tax reductions, most of this obligation derived from a period when the tax concessions were less generous than they now are. In other words, even discounting for the present value of the tax lost, the city has granted property tax reductions which would pay almost 100 percent of the cost of the improvements undertaken: i.e., the city could have used its foregone tax revenue to pay for the improvements directly. New York's experience with tax incentives, then, is in no way inconsistent with the experience of other cities recounted.[22]

The most instructive rehabilitation program may have been that launched by the City of Boston. For fifteen months between 1973 and 1974 Boston offered a property tax reduction equal to 10 percent of the cost of improvements on the first $3,000 of rehabilitation carried out on owner-occupied, one-to three-unit buildings. Unlike several of the other programs reviewed, Boston's was given wide publicity by city officials. It was intentionally aimed at marginal neighborhoods on the threshold of decay rather than at badly blighted neighborhoods. An interim report on the program stated, "The object . . . is

[22] New York State recently (1976) adopted a new tax incentive program that provides abatement for both residential and commercial property investment.

not to renovate badly deteriorated structures but rather to stabilize and preserve neighborhoods with substantially decent housing from decaying. . . ." The city also publicly reiterated its regular policy of not assessing improvements necessary to bring a building to code standard.

During the fifteen months of the program's operation, approximately 1,050 housing units were renovated at a total cost of just over $2 million. Boston's experience probably represents the outer limits of what can be achieved through property tax reductions. The city's program was well thought out and widely publicized; the city itself has a relatively strong demand for renovated housing compared to most other older central cities; and the tax rates from which owners were exempted are among the highest in the nation.

Boston's subsequent experience with rehabilitation incentives illustrates the limitations of property tax abatements. In 1975, property tax reductions were replaced by cash payments as an inducement to rehabilitation. Under a Neighborhood Improvement Program applicable to all households having net taxable incomes of less than $16,000, Boston offered a direct cash grant equal to 20 percent of the value of repair work carried out by owner occupants of one- to six-family buildings (up to a maximum of $5,000 repairs for single-family units). In addition, all qualifying improvements were exempted from property tax liability. In the first seven months of program operation more than 6,500 buildings were repaired, at an estimated total investment of more than $18 million. Approximately 11 percent of Boston's eligible housing stock was upgraded during this brief period.

Boston's success appears to stem from three sources. First, the substitution of cash grants for property tax relief (together with the deepening of the subsidy) stimulated public interest in the rehabilitation program. Second, the cash rebates were applied to the value of repairs as estimated by professional inspectors, not to their costs. This freed homeowners to make use of their own labor. Finally, the program was launched with cooperation from the city's banks. Many households used the commitment of a city grant to negotiate a home improvement loan and thus surmount the financing obstacle as well.

Local experience with property tax abatement programs, then squares with the preceding analysis of the importance of property tax burdens as a deterrent to residential rehabilitation. Property taxes are but one element (and a rather modest one) affecting the price of housing. Selective removal of the property tax will affect relative housing prices and under the proper conditions can generate further investment. But it generally will be more efficient, as in Bostons' case, to achieve any desired stimulative effect through selective grants and interest-rate subsidies, rather than through property tax credits and exemptions.[23]

Although the evidence reviewed here directly rebuts the promise of abatement programs for low-income neighborhoods, it is only marginally relevant to evaluation of land-value tax proposals. The lack of investment response to abatement strategies in low income neighbor-

[23] For a similar conclusion, see Testimony of Kenneth Back, Director, Department of Finance and Revenue; "Property Tax Hearings" of City Council Committee of Finance and Revenue, July 18, 1975.

hoods strongly suggests that land value tax programs (which in low-income neighborhoods work primarily through their reduction in the tax on improvements) would meet the same fate in these neighborhoods. However, the rationale offered for land value taxation is overall urban economic development and general easing of housing markets with trickle-down benefits for the poor, rather than direct stimulation of investment in housing for low-income occupants.

AUSTRALIA AND NEW ZEALAND

Some of the longest experience with land value taxation has been acquired in Australia and New Zealand, where land taxes were introduced at the end of the nineteenth and beginning of the twentieth centuries. Until 1952, land taxes were imposed by the Australian federal government, though at rates that declined significantly over time. The land tax still is used by both states and many local governments. The local property tax in some Australian municipalities is imposed on land values alone, in other places on the total capital value of improvements and land, and in still other places on annual rental values. This diversity of taxing methods, with different bases oftentimes used in immediately adjacent communities, would seem to provide an ideal opportunity for empirical evaluation of the development effects of tax policy.

Unfortunately, one can find in the voluminous literature on Australia's and New Zealand's experience support for almost any conclusion whatsoever regarding the market effects of land value taxation. Some have judged the land value tax to have exerted a powerful influence on the shape of development in Australia's and New Zealand's urban centers;[24] others report no influence at all. There is perhaps a natural tendency for advocates of the land value tax to see in the experience of Sydney, Wellington, and other cities confirmation of their development theories, and for others to find the evidence unsupportive.

The general view of political leaders, developers and tax professionals in Australia and New Zealand, as reported by Woodruff and Ecker-Racz (two experts highly sympathetic to land value taxation), is that the tax system has not had a discernible impact on urban investment patterns.[25] In their words,

> Many have tried to find an empirical support for one or the other tax system (of taxation) from the experience of Australia and New Zealand communities. A considerable number of claims have been made, but careful investigations generally have concluded that the differences traceable to the method of taxation at the local level could not be conclusively determined. The frequently reiterated claim that rating unimproved capital value (i.e., land value taxation) is responsible for a rapid pace of community development could not be substantiated by direct observation. . . .
>
> Virtually every respondent in this inquiry was questioned directly or indirectly as to his opinion on whether local rating had any significant effect on the pattern

[24] For strongly favorable readings of the Australian and New Zealand experience, see Ray W. Archer, "Site Value Taxation in Central Business District Redevelopment" (Washington, D.C.: The Urban Land Institute, Report No. 19, 1972) and International Committee on Real Estate Taxation, "Municipal Improvement and Finance as Affected by the Untaxing of Improvement and the Taxation of Land Values" (New York: Harper Bros., 1958).

[25] A. M. Woodruff and L. I. Ecker-Racz, "Property Taxes and Land Use Patterns in Australia and New Zealand," in Arthur P. Becker (ed.), "Land and Building Taxes" (Madison, Wisconsin: University of Wisconsin Press, 1962).

of land development in any particular community. The replies from the valuer generals or their counterparts and members of their staffs in five of the six Australian states and from the valuer general in Wellington and his deputy in Auckland were almost unanimously negative. The answers from the commonwealth valuers operating out of Canberra, from the tax economists associated with the Australian commonwealth government, and from mortgage lenders, real estate operators, members of the National Capital Development Commission in Canberra, and planners in five of the six Australian states were uniformly negative.

The overwhelmingly negative opinion recorded in the previous paragraph is confirmed by our own observations. . . .

Based on the opinions expressed by the valuers, planners, real estate operators, and others, and our own observations, the conclusion seems well supported that there is no clearly visible difference between localities that use unimproved capital value rating and those that use assessed annual value or improved capital value.

Woodruff and Ecker-Racz go on to argue that the lack of effect may be due to the low rate at which property taxes are imposed in Australia and New Zealand (local taxes at the time of study averaged less than 1 percent of total land and improvement value). The authors also emphasize that land value taxation may well be desirable, even if it does not have visible effects on urban development patterns.

No single reading of the Australian and New Zealand experience—even a generally skeptical one by proponents of the land value tax, such as Woodruff and Ecker-Racz—is likely to command universal agreement. About all that can be said with certainty is the 70 years of experience with land value taxation in Australia and New Zealand and the many studies that this experience has produced have done little to close the gap between proponents and opponents of land value taxation, or even to produce agreement as to the tax's likely investment effects in urban areas. Archer's studies show beyond doubt that individual site investment decisions, and development patterns at the scale of a city block, are influenced by the land value tax. Woodruff and Ecker-Racz find little evidence that the overall growth of Australian cities has been influenced by the taxing system.

HAWAII

The most extensive, recent experience with differential taxation of land and improvement values in the United States has been complied in Hawaii. Differential taxation was put into effect in 1965. The 1969 state legislature rescinded the law as it applied to residential housing, because of perceived hardships imposed upon owners of older housing. Just this year, the differential rates on other types of property were terminated, effective July 1, 1978, returning the state to uniform taxation of land and property values.

In its testimony in favor of terminating the differential taxation of land and assessments, the State Department of Taxation concluded:

(When the original bill was passed) it was believed that the major benefits flowing from its adoption would: (1) reduce the social evils of speculation in land; (2) lessen the economic evil of unused land and underdeveloped land; (3) stimulate building construction; and (4) stimulate development of blighted areas. Although no extravagant claims were made that land prices would be reduced, it was one of the goals of the sponsors of the so-called graded tax and certainly is one of the most important claims of those who favor site value taxation.

There is no evidence after 10 years of the graded tax that it has reduced speculation in land; placed unused land or undeveloped land into higher use; stimulated building construction, or stimulated development of blighted areas.

Conditions have changed and there is definite pressure to preserve land in open and green space and not to develop to the highest density.[26]

V. Adequacy of Land Values as a Tax Base

As of 1977, land values constituted just under 40 percent of the District of Columbia's total assesed valuation. District authorities have made a special effort to assess land at or near market value; unlike the situation in other jurisdictions, therefore, the contribution of land values to the assessment base may be taken as roughly reflective of its contribution to the total market value of the property tax base. Replacement of the present 1.83 percent uniform property tax is estimated to require a tax rate of 4.5 percent levied on the value of land alone, if it were to raise the same total revenue. A land value tax pegged at 4.5 percent of market value could not be considered confiscatory, or even in excess of the tax rates now levied on land in several cities via the unifrom property tax. In this sense, the District's land values are "adequate" to support the alternative form to taxation.

The adequacy of land as a revenue source is primarily a question of the future growth in its valuation. A stagnant tax base, or one that grows slowly in total value, will require constant upward revisions in the tax rate if tax receipts are to keep pace with public expenditures. Continual increases in tax rates are unwelcome actions for elected officials to take, are likely to prove irksome to citizens, and inject an element of instability into economic markets. Other things equal, a moderately elastic tax base (i.e., one whose valuation grows over time) is to be preferred to a tax that grows only sluggishly.

Conversion to a land value tax would deprive the property tax base of one of its traditional sources of growth: new construction. Neither the capital investment stimulated by the tax change nor the trend-line accumulation of real estate investment within the city would enter the assessment rolls. With capital improvements exempt from tax liability and with the amount of land in fixed supply, the only source of tax base growth would be increases in the market price of land. The adequacy of the future growth of the tax base would then depend upon the rate of increase projected for central city land values.

Land value taxation is most secure in its revenue-raising power under conditions of rapid economic growth. During the development stage, urban land values tend to climb rapidly as the municipal infrastructure is completed and as the demand for limited land space places pressure on market prices. Those cities like Sydney, Australia, Johannesburg, South Africa, or Regina, Canada, which adopted land value taxation near the beginning of the century have found land values to increase substantially. They did, however, decline during the Depression and have lagged by a considerable margin the increased value of improvements.[27]

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[26] "Legislative Tax Bill Service" (Hawaii), January 31, 1977.

[27] Between 1922 and 1942 land values in Sydney increased by 64 percent; improvement values, by 88 percent. In Regina, between 1911 and 1948 land values increased by 70 percent; improvement values, by 357 percent. International Research Committee on Real Estate Taxation, "Muncipal Improvement and Finance," op. cit.

Land values also tend to respond well to general price inflation. Henry George's original advocacy of land value taxation was influenced by his observation of the speculative boom in California land prices during the gold rush. The rapid appreciation in land prices there apparently engendered the idea that land values could serve as the single source of all local government revenue.[28] Areas that have adopted land value taxation often have done so during speculative land booms—partly in an effort to dampen the speculative fever and partly to claim its fruits for the public sector.

Whether land values are a good source of revenue for a mature central city economy is less clear. In an area like the District of Columbia most of the municipal infrastructure is now in place, so that future land value gains from public investments are likely to be modest. (The land value impacts of Metro construction are an exception to this generalization). Similarly, the opportunities for major value-enhancing new business developments are less than in a growing urban area with large amounts of undeveloped space.

The price of central city land and hence the value of the land tax base will tend to mirror, and even magnify, the general economic prospects of a city. Every favorable or adverse condition of city life—from the general level of tax burdens to public school quality, from the rate of central job growth (or loss) to neighborhood housing conditions—has an impact on urban land values. Urban land possesses value because of its locational advantages, and the locational value of a site depends upon the economic vigor of its surroundings. In cities like New York, Detroit, or Buffalo, which have begun to experience annual declines in property tax assessed valuations, the erosion of the property tax base would be multiplied if authorities were now obliged to rely on land values alone. The bleak economic prospects for these cities and their deteriorating conditions have been capitalized into significant declines in land prices.

The District of Columbia has been spared the worst pressure of the older and declining cities. Land values in the District have continued to rise, in some neighborhoods at spectacular rates. Since the last several years have witnessed a strong real estate market in the District, the period provides a favorable basis for comparing the growth rates of land values and improvements. As can be seen from Table 1, assessed land values have grown steadily over this period, but have lagged behind the growth in improvement values. Nonetheless, for practical purposes the land value base has appreciated at a sufficiently rapid and steady pace as not to raise special concern about the revenue-producing capacity of an alternative tax system.

A full calculation of the fiscal advantages and disadvantages of converting to the land value tax would take account of the tax's interaction with other parts of the District fiscal system. Adoption of the land value tax would alter the revenues received from other tax sources, as well as the costs of public service provision. In view of the many qualifications entered above as to the investment effects of a tax change, it is perhaps unnecessary to stress that a precise estimation of these outcomes is impossible. Nevertheless it may be valuable to call attention to the nature of the interactions.

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[28] C. A. Barker, "Henry George" (New York : Oxford University Press, 1955).

To the extent that adoption of land value taxation succeeded in stimulating commercial and retail construction, it would tend to increase receipts from sales and income taxes, as well as revenues from building permits and other construction-related sources. Tax receipts would be especially benefited if the District were to adopt the so-called commuter tax, with income tax yields tied directly to employment levels, rather than only indirectly linked to employment through the influence upon residential location decisions. Although it is not possible to estimate the indirect effects on other tax yields with any precision, the gains in revenue from present tax sources should be positive though modest.

Offsetting these auxiliary tax gains would be the increased public services needed by the firms and households occupying the more intensive development encouraged by the tax revision. Under the current tax system the capital improvements that add jobs and people to the city bear a direct tax burden. This connection would be severed under the land tax, making it more probable that development of land sites would impose a net fiscal drain on the government. These indirect costs, like the indirect revenues associated with land value taxation, are likely to be of moderate scale.

SUMMARY

From the point of view of future revenue production, there seems to be little to dictate a preference for either the land value tax or a uniform property tax. In recent years, the growth of land value assessments has lagged slightly behind the growth in improvement assessments, but the difference has been small. The indirect revenue yields of land value taxation would be greater if the District were able to implement an employment tax on all earnings generated within the District, though the market effects of such a tax would offset some of inducement to central area office growth that the land value tax is intended to provide.

VI. Redistribution of Tax Burdens and Wealth

Conversion from the present system of uniform property taxation to a system of land value taxation would, at current assessed valuations, require that tax rates be changed from a rate of $1.83 per hundred dollars of all real property values to a rate of approximately $4.50 per hundred dollars of land value only, if total revenue yield were to be held constant. This changeover would redistribute tax liabilities and trigger wealth changes, sometimes of considerable magnitude.

The first section below examines the pattern of the initial redistribution of tax burdens. The second section examines wealth and price changes, or the ultimate incidence of the tax redistribution. The third section focuses on special hardship cases that would arise under the land value tax.

TABLE 1—ASSESSED VALUES OF TAXABLE PROPERTY

Year	Assessed value of land (million)	Assessed value of improvements (million)	Land as proportions of total taxable property base (percent)
1969	$1,547	$2,010	43.5
1970	1,686	2,066	44.9
1971	1,684	2,152	43.9
1972	1,704	2,235	43.3
1973	1,713	2,323	42.4
1974	1,730	2,438	41.5
1975 [1]	1,605	2,312	41.0
1976 [2]	2,996	4,435	40.3
1977	3,230	4,891	39.8

[1] Assessed valuations in 1975 were influenced by the court-ordered reduction in the ratio of assessed to market value for commercial and multifamily residential properties from 65 percent to 55 percent.
[2] Assessed valuations in 1976 reflect the conversion to full market value assessments.

Source: Department of Finance and Revenue, Real Estate Assessments Office.

CHANGES IN TAX BURDEN

The Department of Finance and Revenue has conducted an extensive study of the initial redistribution of tax burdens that would occur as the result of a conversion to land value taxation.[29] This redistribution is easy to summarize. As of 1975, improvements accounted for 59.4 percent of the total assessed value base of the District. Any individual property where improvements account for more than the city-wide average of 59.4 percent of total assessed value would have its tax bill initially reduced because of the change in taxable base. Properties where improvements account for less than the city-wide average share of total assessment would initially pay higher property taxes.

The properties which in the first round would most obviously be penalized by the adoption of the land value tax are those that make relatively little use of capital improvements. Falling in this category are land being held for speculative purposes, commerical land used for parking lots, centrally—located warehousing activity, and low value residential properties in neighborhoods of strong housing demand.[30] From a market perspective these properties make inefficient use of land.

On an aggregate basis, the study by the Department of Finance and Revenue shows that single family housing in the District would benefit from an 11.2 percent reduction in property tax burdens as a result of the adoption of a constant-yield land value tax.[31] Multi-family residential housing would benefit from a 22.6 percent reduction in tax load. The loss in tax revenue from these classes of property would be made up by a 23.7 percent increase in the taxes paid by commercial

[29] Kenneth Back, "Land Value Taxation in Light of Current Assessment Theory and Practice," in Daniel M. Holland (ed.), "The Assessment of Land Values" (Madison, Wisconsin: 1970).

[30] Testimony by the Washington Board of Trade has emphasized the increased tax burden on parking lots. (Statement before the D.C. Tax Revision Commission, January 28, 1977). Studies by Margaret Reuss demonstrate the increased tax burden on furniture warehouses along Furniture Row.

[31] This saving is in relation to the present system of uniform taxation. Should the currently pending proposal to exempt from property taxation the first $6,000 of assessed valuation of owner-occupied homes be approved, conversion to uniform land value taxation would actually increase the average tax burden on single family housing.

properties.[32] On an aggregate basis, therefore, adoption of a land value tax would share some of the characteristics of a classified property tax, having the effect of increasing the effective rate of taxation paid by commercial and industrial properties, while decreasing the tax burden on residential properties.

Several caveats should be kept in mind when interpreting the Department of Finance and Revenue study. First, the study classified properties by their zoning classification. Thus both the residential and commercial classifications contain undeveloped properties zoned for these uses, as well as developed properties. The aggregate tax reduction for single family and multi-family housing would be somewhat greater, and the tax increase for commercial properties alone. The initial burden of the new tax system, of course, would fall most heavily on vacant land in each of the use classifications.

Second, it is possible that land values are not accurately assessed under the current assessment system, which devotes less effort to the separation of improvement value from land values than would be necessary under a tax system that differentially taxed the two bases. District authorities, however, have made considerable effort to fully assess land values.[33] Although actual assessments would change to some degree if land value taxation were adopted, the present assessments should provide a reliable indication of the initial tax impact.

Third, there is obviously a great deal of variation in improvement/land ratios within each use classification, even after exclusion of undeveloped land. For this reason, aggregate groupings are of limited value in understanding the detailed impact of a tax change.

Finally, the comparison of tax changes with neighborhood household income levels uses information on incomes gathered from the 1970 census. Given the rapid population turnover in some District neighborhoods that has occurred since 1970, this may introduce substantial error into the comparison of tax changes by neighborhood income level.

The study's comparison of changes in tax liability by census tract with average tract income indicates that a conversion to land value taxation in the District of Columbia would most benefit middle income households. Single family homes in the very poorest neighborhoods would face stiffer tax bills. Homeowners in the most affluent neighborhoods would benefit from tax reductions, though these would not be as large or as uniform as the reduction enjoyed by middle income neighborhoods.

Table 2, summarizes the changes in residential tax burdens that would occur in extreme income districts as a consequence of the first round of tax changes.[34]

Inspection of the geographical pattern of tax increases confirms the fact that a land value tax would place the greatest tax pressure on homeowners in neighborhoods experiencing active redevelopment or possessing predominantly commercial uses. For example, two of the

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[32] Tax burden shifts by use classification must be examined freshly in each urban area. A study of the New York City area indicates that when full market values are used as the assessment basis, the principal losers from a changeover to land value taxation, besides vacant land, would be one-and two-unit houses. Philip Finkelstein, "Real Property Taxation in New York City" (New York : Praeger, 1975).

[33] Kenneth Back, "Land Value Taxation in Light of Current Assessment Theory and Practice," in Daniel M. Holland (ed.), "The Assessment of Land Values" (Madison, Wisconsin : 1970).

tracts with the highest average gain in tax liability for single family homes—in excess of 130 percent—are those located in the region bounded by The Mall and Massachusetts Avenue and 15th Street, N.W. and South Capitol. This is a preponderantly commercial area. The median household income in these tracts in 1970 was less than $5,500. The average single family home improvement was valued at less than $2,500, while the land underlying these homes was valued at more than $55,000 per unit. Another example of strong imbalance between land and improvement values occurs in the area between Columbia Road and Florida Avenue and between 16th and 18th Streets, N.W. This area of high neighborhood turnover, investment, and price appreciation has already experienced rapid assessment increases under the present property tax system. The tax burden would be compounded under the land value tax.

TABLE 2.—TAX CHANGES BY MEDIAN INCOME OF CENSUS TRACT

	Single family housing	Multifamily housing
Ten lowest income census tracts:		
1. Number of tracts enjoying tax reduction	1	6
2. Average tax change	+46.2	+11.4
Ten highest income census tracts:		
1. Number of tracts enjoying tax reduction	6	9
2. Average tax change	−3.2	−13.2

Source: Back, loc. cit.

The burden of a land value tax on these low income neighborhoods is perhaps better viewed as an example of the special hardships created by a change in tax base rather than as indicative of the board distribution of tax liability. As Table 3 indicates, tax changes are more evenly distributed by census tract over the entire lower third of the District's income distribution. Moreover, the tax burden on single family homes falls most heavily on tracts that have been zoned for commercial or multi-family development, where the number of single family housing units is relatively low. Of the 52,783 single family properties in census tracts where the 1970 median household income was $10,000 or less, only 18 percent lie in census tracts which show an average tax increase under site value taxation.

TABLE 3.—CHANGE IN TAX BURDEN BY INCOME CLASS

	Lowest ⅓	Middle ⅓	Highest ⅓
Median tract income (1976)	$3,808–7,812	$7,872–10,614	$10,722–27,124
Number of tracts with tax increase	23	6	13
Number of tracts with tax decrease	24	38	34
Multifamily housing:			
Number of tracts with tax increase	6	6	7
Number of tracts with tax decrease	40	40	39

Source: Back, loc. cit.

[34] The Back testimony (p. 57) shows a much larger portion of low income census tracts with tax increases for multi-family properties but this apparently is an erroneous interpretation of Table 6 of the same testimony.

ULTIMATE INCIDENCE AND WEALTH CHANGES

The ultimate incidence of the changed tax burdens will depend upon the workings of the marketplace, constrained by the public rules governing development and rent levels.

For most existing single family homes the initial tax impact is, to a good approximation, also the ultimate tax incidence. Except for homes that are sufficiently deteriorated to make short term replacement feasible, most single family housing can be regarded as a single package of house and lot. The market value of this package will change to reflect the changed tax liability that ownership carries. To a rough approximation, the market value of single family homes will change by the amount.

$$\frac{\Delta T}{i}$$

where ΔT is the change in annual tax liability and i is the interest rate. Thus the market value of individual homes may be expected to shift by eight or ten times the annual change in tax burden. This is not a wealth change in addition to the changed tax liability, but merely the reflection in a house's present market price of the net present value of the changed tax obligations.

The incidence of the tax shifts in the rental housing sector will depend crucially upon the way the District's rent control laws are applied. In a free market, unconstrained by rent controls, the increased tax on land values would be absorbed by the owners of rental housing, in the form of lower land values, while the reduced tax on improvements, though initially captured by the same owners, eventually would be passed on to tenants in the form of lower housing prices. The reduced tax on improvements would call forth a greater supply of rental housing, depressing rental values.

Under the District's present and proposed rent control laws, the tax relief secured by apartment owners would have to be passed on more directly to owners. Whether rent levels are regulated by a rate-of-return ceiling, as at present, or by allowable rent increases to offset utility, tax and other cost increases, as proposed, a reduction in tax payments by landlords would have to be reflected in lower rents, either immediately or as the result of lesser rent increases at the next annual rent adjustment. Thus the benefits of the shift in tax bases would be captured at once by renters (a fact which would make the incidence of the shift more progressive), albeit at the cost of completely removing the land taxes incentives for further construction of rental housing. In fact, under the operation of rent controls, the effect on the rental housing sector of land value taxation would be much the same as the effect of a classified tax system that reduced the average tax burden on rental housing by 24 percent.

How large would be the rent savings to tenants? An Urban Institute study of property taxes as a fraction of rent charges in the District of Columbia indicates that property taxes amount on average to about 13 to 14 percent of annual rents. A reduction of somewhat less than one-fourth of the property tax burden on multi-family housing, then, would translate into a one time rent reduction of 3 to 3.5 percent, due to the change in tax bases. The rent saving would be somewhat larger than this on good quality, more expensive rental housing; it would be somewhat lower on poorer quality rental housing occupied by lower income tenants.

The ultimate incidence of the shift of tax burdens within the commercial sector has been analyzed in detail by Jon Sonstelie as part of this series. In general, this analysis shows that although the proportion of the tax burden that is shifted backward into land prices and the proportion that is shifted forward to consumers remain unknown, the tax burden is more progressively distributed, especially among D.C. taxpayers, than a tax of the same revenue yield levied upon residential housing. This implies that the net shifts occasioned by the conversion of property tax base probably are in the direction of greater progressivity under the land value tax.

Finally, there remains to be considered the incidence of the tax shifts as they affect vacant land or properties with deteriorated improvements ready for replacement. Initially, these properties will suffer the greatest increase in tax burdens, as land accounts for a very large share (or all) of the properties' market value. However, the potential for future profitability on many undeveloped sites is greatly enhanced by the untaxing of improvements. Since the value of a developable site is established as a residual representing the capitalized value of the locational rent that can be derived from optimal development of the site, any public policy that increases the profitability of development will tend to boost the market value of parcels ripe for development.

This relationship can be seen from Figure 5. The downward sloping curve, DD', in the diagram represents the marginal revenue product from further doses of capital improvements. Capital investment will be carried out to the point where the marginal revenue derived from further capital intensity just equals the marginal cost of capital. Under the initial cost of capital, shown as the solid line SS in the diagram, capital development will be carried to the point Q_o. The shaded area under the curve represents the net profit or site rent achievable from this optimal development.

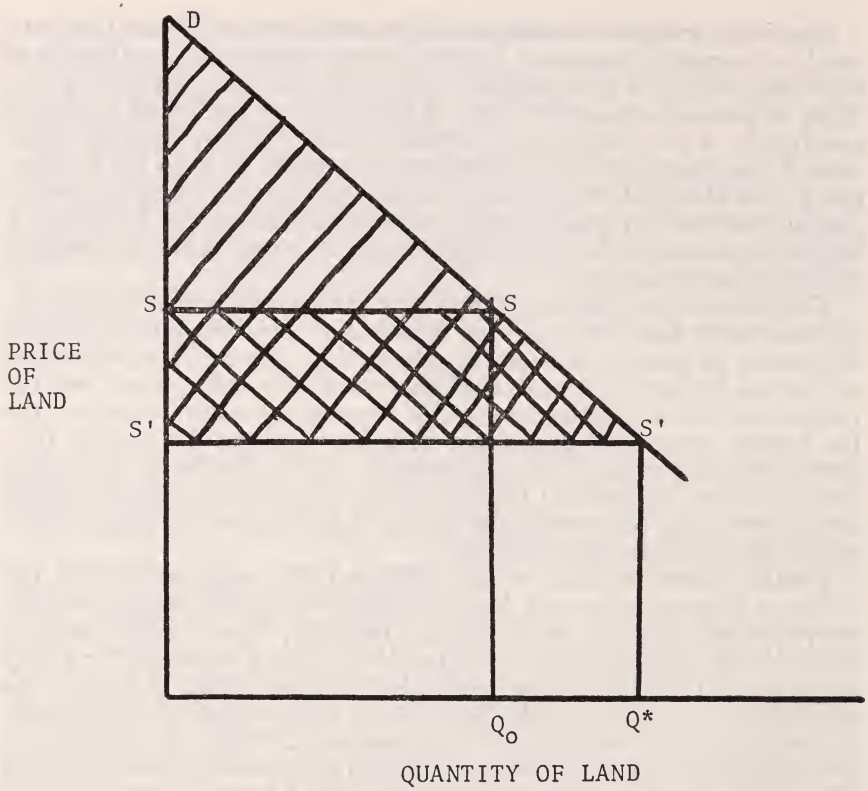

FIGURE 5.—Increase in net rent (and market value) of parcel from untaxing improvements.

Removal of the tax on improvements will lower the cost of capital curve to SS'. As is evident from the figure, this shift will trigger two responses. The optimal capital intensity of development will expand to Q*. At the same time, the shaded area corresponding to site rent will grow substantially, indicating that the net profitability of development (and hence land values) will be greater under the revised system. Of course, the boost to land values from untaxing improvements must be balanced against the loss of value from the stiffer taxation of land itself. However, for a site in relatively inelastic demand, the value-creating factors will easily predominate. Perhaps ironically, the most substantial gainers from the tax changeover will be the owners of currently undeveloped land and other low density properties which are targeted for high density development. Although the conversion to land value taxes discourages land speculation as a future economic activity, it rewards the current generation of land speculators, by raising the market value of their properties. In the case of vacant sites inside major development districts, the capital gains from untaxing improvements will be very substantial, indeed.

HARDSHIP CASES

One unambiguous lesson to be gained from the international experience with land value taxation is that equity debates will be dominated by the consideration given to hardship cases. As has been repeatedly noted, a land value tax falls hardest on relatively low income homeowners and small businessmen located in neighborhoods of booming investment demand. Other countries have found it necessary to structure their tax laws to provide special protection for these citizens—thereby blunting the market effects of the land value tax.

In their report on Australia's application of land value taxation, Woodruff and Ecker-Racz report:

> Cases arose in the older parts of virtually every large Australian city in which elderly and relatively impoverished pensioners found it difficult to retain their homes in neighborhoods where land values were rising as commercial and apartment uses replaced single family residential uses. . . . This generated a political situation that government found intolerable and the Parliament of each Australian state enacted hardship exemptions to permit such people to retain their homes despite the fact that surrounding property was being converted to commercial, apartment, and other more profitable uses. . . .
>
> While special tax concessions of this kind might have developed under any property tax system, the pressure for relieving pensioners and farmers is probably especially compelling when property is taxed on the basis of unimproved capital value basis. . . . Economic distress suffered by a fairly large number of relatively poor people causes considerable concern, especially under Labour governments, and leads to prompt relief measures.[35]

The introduction of site value taxation in Jamaica in 1957 was marked by a similar debate over hardship cases. Such dramatic examples as small fishermen whose beach properties were assessed as having potential for luxury hotel development illustrated the tension between current uses of land and the value of the land based upon development to its profit-maximizing potential.[36]

In Jamaica's case the treatment of hardship cases was resolved by establishing a Taxation Relief Board. Tax liability would be established by the Board on the basis of use value rather than market value, in cases where the value of property in farm use was influenced by its potential for development, or in cases where the market value of housing was influenced by the potential of the property for conversion to hotel or commercial use or more intensive housing development.

As was noted earlier the State of Hawaii rescinded its differential taxation of land and improvements within the residential sector after only four years, because public discussion concentrated so greatly on the hardship cases of the owners of older housing, built at lower density. Though it was infeasible for most of this housing to be replaced, owners were forced to pay far greater than average tax bills, in view of the low improvements to land value ratio, caused by the steadily increasing land prices.

Roughly parallel hardship provisions probably would be necessary in the District of Columbia. The District's present circuit-breaker law works above all to shield low income property owners from

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[35] Woodruff and Ecker-Racz, "Property Taxes and Land Use Patterns in Australia and New Zealand," loc. cit.

[36] See Daniel H. Holland, "The Taxation of Unimproved Value in Jamaica," 1965 Proceedings of the Fifty Eighth Annual Conference on Taxation, Mod. Walter J. Kress (Harrisburg, PA : 1966).

increased property tax liability caused by rising neighborhood market demand. The continuation of the circuit-breaker provision probably would provide adequate protection for hardship cases. Their application would pose three difficult problems, however. First, as the Department of Finance and Revenue has pointed out, a relatively low share of the taxpayers eligible for circuit-breaker relief actually receive it, because of the administrative complexities of the filing procedure. Second, application of the present or proposed circuit-breaker laws to a 4.5 percent land value tax could add significantly to the cost of property tax relief, thereby cutting into the adequacy of land values as a revenue source. Any conversion to land value taxation should be preceded by a careful study of the cost of providing circuit-breaker relief under the proposed tax system, and the effectiveness of the circuit-breaker as a shield against high land tax burdens.[37]

Finally, the multiplication of circuit-breaker relief for hardship cases may conflict with the development objectives of the land value tax. The poor families living in single family homes in the area between the White House and the Capitol qualify for large circuit-breaker relief (and would qualify for even more generous relief under a land-value tax), but they also represent the type of land use that the pressures of the land value tax are meant to squeeze out. It is difficult to devise a relief system that eases the burden on individual households while maintaining the full force of the land tax's market effects.

Despite such obstacles, many experienced assessors have expressed confidence that land value taxation can be carried out fairly and efficiently. Chief assessors in Australia report no special problems with land value assessment, and even find it easier to implement than assessment of land and improvements together.[38] Kenneth Back, Director of the District's Department of Finance and Revenue also has affirmed his belief that accurate land value assessments are achievable within the District of Columbia.

What "value" should assessors in principle have in mind when they appraise urban land parcels? The easiest value concept to assess is the market price the undeveloped site would command. This is the "site value" of a parcel. Much of the value of an unbuilt urban site, however, is conferred by "invisible" capital improvements: both the capital improvements surrounding a site and the sewer, water, electrical lines, private roads, etc. that facilitate its development. The market value of an urban lot reflects the very significant contributions to value that these capital improvements make.

A strict interpretation of the theory of land value taxation would require that the value added to land by private capital investment be excluded from the land value assessment. The remaining value represents the strict "unimproved value" of land. To include invisible capital improvements in the valuation process is to discourage private investment in capital infrastructure just as a tax on visible improvements discourages private investment in buildings.[39]

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[37] An effort was made to carry out this analysis as part of the present report. However, the income tax files are confidential and the Department of Revenue and Taxation was unable to detail personnel for the study of the files.

[38] See Woodruff and Ecker-Racz, loc. cit.

[39] Kenneth Back, "Land Value Taxation in Light of Current Assessment Theory and Practice," in Daniel M. Holland (ed.) "The Assessment of Land Values" (Madison, Wisconsin: 1970).

The value added to land by public capital investment is properly included in tax base valuations, on the grounds that this private wealth has been created by public expenditure. Since public authorities are immune from property taxation, their investment decisions are not influenced by tax liability. For private investment, the situation is quite different. Private investment in roads, site preparation, etc. is as sensitive to tax burdens as investment in buildings; the rationale for untaxing the latter applies with equal force to untaxing the former. Moreover, major private redevelopments often internalize external effects, with the result that individual building sites take on greatly increased value because of the investment the private developer has made in the rest of a project. To tax this land value increment would be to discourage large scale private redevelopment activities.

Efforts to apply the literal tenets of "unimproved value" assessment sometimes take on a whimsical character. When London tried to implement unimproved land value taxation during the Lloyd George period, assessors were enjoined to determine the value that central London sites would command if consisting only of "sedge, grass, or other natural growth." At least in the short run, the only feasible solution to the assessment dilemma seems to be to appraise undeveloped sites at their "site value," including the value of invisible improvements. Special exceptions to the valuation process could be adopted when these valuation procedures appear to unduly discourage private sector infrastructure development.

The severity and conspicuousness of the hardship cases requires that their handling be given careful consideration before any adoption of a land value tax. In particular, it needs to be determined whether those special cases can be resolved satisfactorily, while still preserving the land value tax as a viable revenue source and an attractive inducement to development.

VII. Assessing Land Values

A major practical obstacle to the implementation of a land value tax is the difficulty of accurately assessing the value of unimproved land in a fully developed urban setting.

At present, assessors estimate the market value of developed parcels by estimating the value of land and improvements together, just as the parcels are sold in the private marketplace. Separate assessed valuations may be assigned to the site and to the capital improvement, as in the District of Columbia, but the division between land and improvement value typically is made by rule of thumb rather than by independent evaluation.

Undeveloped urban land has proved the most difficult part of the present property tax base to assess. In the most recent census of Governments, assessments for vacant land inside urban areas were found in almost all cities to have greater coefficients of dispersion than assessments of other types of property.[40] Within the District of Columbia,

[40] Census of Governments, Vol. 2, "Taxable Property Values and Assessments-Sales Price Ratios," Part 2 (1973). The coefficient of dispersion measures the deviation between the full value assessment and the actual sales value of parcels, as a fraction of sales value.

the assessment error for vacant land parcels, as measured by the coefficient of dispersion, was approximately two and one half times as great as the error involved in the assessment of single family home values.[41] Whatever the theoretical possibilities for assessment accuracy, present assessment methods in the United States, and in particular in the District of Columbia, do a poor job at estimating the market value of undeveloped land.

Assessing the value of land underlying buildings is a still more difficult undertaking. The most succesful approach seems to be to compare developed sites with comparable undeveloped land parcels which are sold in the market. This comparison can be performed either formally through regression analysis or informally through what assessors call examination of "comparables." In either valuation method, the accuracy of assessment of the land underlying developed parcels obviously is limited to the accuracy of raw land valuations themselves. Moreover, as has been emphasized throughout this study, the market value of undeveloped land is derived as a residual from the net profit that can be secured by developing a site to its optimal intensity. The market value of the same land would be lower—often markedly lower—if the parcel were constrained to be developed in sub-optimal fashion. For this reason the market value of the land underlying already developed sites cannot be fairly compared to the market value of undeveloped land. Virtually all existing developed sites will be sub-optimally developed for today's market conditions, especially if these conditions include recent removal of the tax on improvements. Consequently, the land underlying these sites, as encumbered, will have a lower market value than similar undeveloped land. This fact makes it impossible to use the comparables method of extrapolating from the sales or market value of undeveloped parcels to the market value of developed land.[42] Not only is the market value of the encumbered land less, but the difference in value will vary greatly depending upon the extent of sub-optimal development.

In extensively built-up cities, of course, it is not unusual to find block after block of fully developed land, without undeveloped tracts to establish market valuations of any kind. For this reason, many commentators have reached the conclusion that land value taxation is most feasible to introduce in younger and growing cities, where there still are a significant number of undeveloped land parcels to help establish market valuations, however, great the difficulties of extrapolation.[43]

Perhaps the greatest administrative difficulty posed by land valuation is that there would be little public check on the accuracy of assessment. At present, assessed valuations can be compared directly with sales values. The regular surveys of assessment accuracy by the

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[41] The coefficient of dispersion for single family home assessments was estimated by the Bureau of the Census as 22.5 percent; for vacant platted lots it was 55.4 percent.

[42] In some other countries the difficulty of establishing the market value of land underlying developed properties has been resolved by requiring that assessments reflect the potential use value of sites, as if they were vacant, rather than their present market value. This is the practice, for example, in Australia. Under this definition of land value assessment, comparisons with the market price of undeveloped parcels are appropriate. Present law in the District of Columbia, however, requires that assessed valuations be based on "full market value." A switch in the assessment basis to potential development value, as if vacant, would require that Congress pass new legislation.

[43] See Ursula Hicks,

Bureau of the Census, by local authorities, and by citizen watchdog organizations provide a valuable discipline on the assessment process. Sales-value comparisons also constitute the best evidence that an aggrieved taxpayer can adduce in contesting overassessment. Under a system of land value taxation, the basis for assessments would be far less evident to the ordinary taxpayer. The land underlying developed properties is not sold alone on the marketplace; therefore, sales values cannot be used directly to establish assessed valuation. Neither a regression formula nor a cadastral mapping for establishing land values is easy to explain to the taxpaying public. Combined with the inherent difficulty of establishing independent land values for built-up properties, these considerations argue that there would be a significant increase in the difficulty of the assessment responsibility under a land value tax.

Of still more serious concern is the legal acceptability of existing methods of land value assessment. After a comprehensive review of the relevant case law, Professor Oliver Oldman of Harvard Law School, perhaps the nation's foremost expert on the legal aspects of property taxation, has concluded that none of the present methods of land value assessment could withstand court appeal by an aggrieved taxpayer, because none adequately establishes (according to the criteria employed by courts) the market value of the land underlying individual developed properties. Extrapolations of land values from land value contour maps and other methods frequently proposed for land value assessments would not, in Oldman's interpretation, satisfy court requirements for determination of the market value of individual properties.[44]

The practical obstacle of accurate and legally acceptable assessments has figured prominently in other countries' decisions about the site value tax. For example, the special Parliamentary committee on local government finance established in Great Britain concluded that "there is considerable doubt whether the evidence of land sales would be adequately and evenly distributed to produce consistent assessments. These difficulties would mean that there would be considerable scope for challenge, appeal and litigation. Difficulties would also arise because of the absence of policy and of decisions from the Court. A new range of law and practice would have to be developed." [45]

SUMMARY

The mechanics of land value assessment assume importance only if land value taxation is deemed desirable in principle.

The implication of this section is that if land value taxation is to be recommended for future implementation, or to be given serious consideration as one of a limited number of tax alternatives, the practical and legal obstacles to the assessment of land values ought to be given careful review, before the change in tax system is approved. The reasons for caution are:

In practice, the value of undeveloped land has been assessed with great inaccuracy by U.S. assessing authorities, including those in the District of Columbia.

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[44] This analysis will appear in a forthcoming law review article by Professor Oldman (conversation with Professor Oldman, June 9, 1977)

[45] Report of the Committees on Enquiry, "Local Government Finance" (Report to Parliament, May 1976), p. 439.

The market value of land underlying developed properties is inherently difficult to measure. Either assessment methods would have to be improved, or legislation would have to be passed by Congress changing the basis of assessment from market value to potential value as if vacant, in order to remove this difficulty.

In a nearly developed city like Washington, D.C., there are few sales of vacant land to use in establishing market values. This increases the practical difficulty of establishing market values and of explaining the basis of disputed assessments to aggrieved taxpayers.

There may be legal difficulties in sustaining land value assessments in the face of court appeals. This question requires full resolution before any change in the tax base is adopted.

THE CLASSIFIED PROPERTY TAX

(By Jon Sonstelie, Department of Economics, University of California, Santa Barbara)

I. Introduction

The classified property tax is a form of the property tax in which different classes of property are taxed at different rates. It may be implemented by assessing property in different classes at different percentages of market value, or by applying different tax rates to different classes. In either case, the distinguishing charactertistic of the classified property tax is that the effective tax rate (the tax on a property as a percentage of its market value) is different for different classes of property. It therefore stands in stark contrast to the more common, uniform property tax in which the effective tax rate is the same for all taxable property.

Classification is an old idea. Not long after the Civil War, states began to tax intangible property at lower rates than other property. More recently, however, attention has shifted to the classification of real property, i.e., the taxation of different classes of real property at different rates. For real property, classes are defined by use. Thus, a typical classification might have two classes: residential real estate and commercial real estate. More elaborate classifications are certainly possible, but almost all share a common characteristic—classes are defined by the use to which the real estate is put. This paper will be exclusively concerned with the classification of real property.

The classification of real property is currently practiced in at least five states: Alabama, Arizona, Minnesota, Tennessee, and West Virginia. In addition, Cook County, Illinois, has a classified real property tax, South Carolina has just instituted one, and Louisiana is scheduled to start in 1978. Montana also has a classified property tax, but in many respects it is more like a system of exemptions than a full-fledged classified property tax. These state classifications are summarized in Appendix I. To my knowledge, no other state currently classifies real property. Thus, although the classification of real property is practiced in some states, it has clearly been a limited phenomenon.

This may change, however, because more and more states are beginning to consider the classification of real property as an alternative to the current uniform property tax. California, Ohio, and the District of Columbia are notable examples, and there are undoubtedly others. This resurgence of interest is due, I believe, to an increasingly common public perception that the property tax falls too heavily on low-income taxpayers.[1] Classification is seen as a way of alleviating

[1] The prevalence of this perception was documented in a recent survey by the Advisory Commission on Intergovernmental Relations. According to that survey, the most common complaint about the property tax was that it falls to heavily on low-income taxpayers. See "Changing Public Attitudes on Government and Taxes," Washington, D.C., ACIR, 1976.

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this perceived problem because it would permit a state or jurisdiction to decrease the effective tax rate on some classes of real property relative to that on others. Presumably, if the properties favored by this shift were owned in large proportion by low and middle income taxpayers, the burden of the property tax on these taxpayers would decrease. Thus, the classification of real property is seen as a mechanism for redistributing the property tax burden. It is for that reason that it has received so much attention lately.

Accordingly, the first question to be asked in evaluating classification is: Can it achieve the distributional consequences its advocates claim for it? How exactly does a change in relative tax rates between classes affect the distribution of the property tax burden? At first glance, the answer may seem obvious. After all, we have some idea of how the ownership of various classes of property is distributed among taxpayers. If the effective tax rate on that class of property perceived to have the greatest ability to pay (e.g., commercial property) is increased relative to the effective tax on other property (residential property), can we not then assume that the burden of the tax will be distributed less regressively?

The answer is no, and the reason for it is that the property tax is often shifted. That is, it is not necessarily borne by the owner of the property on which it is levied. For example, a tax on property occupied by commercial establishments may, under certain circumstances, result in higher prices for the goods and services sold by those establishments. In that case, the tax is at least partly shifted forward to the customers of those establishments. This example illustrates just one possibility for shifting of the property tax. In fact, there are many others. Consequently, the ultimate distributional consequences of altering the relative tax rate between different classes of property are not necessarily what they seem to be at first glance.

That is not to say that it is impossible to estimate these consequences. It does mean, however, that the job is somewhat complicated. It means, in particular, that knowledge is required of the extent to which different classes of property are able to shift taxes and to whom these taxes are shifted. These subjects are discussed in section IV of this paper. The shifting assumptions derived there are then used to estimate the distributional consequences of a specific form of the classified property that was proposed for the District of Columbia by the City Council.

The distribution of the burden of a tax is not the only important consideration in evaluating its ultimate desirability. Many times, other important characteristics of a tax are revealed through experience in legislating and administering it. The experience that other jurisdictions may have had with a tax is, therefore, an important source of information about it. In this respect we are fortunate with the classified property tax because it has a rich history. In section II, relevant aspects of this history are reviewed.

Another important characteristic of a tax is its effect on the allocation of resources in the private sector. Any tax will tend to interfere with and distort economic decisions in the private sector. In some special cases, these interferences may be intentional and desirable, but in most cases they are not. Accordingly, one goal of tax policy is to mini-

mize these unintentional interferences. This is sometimes called the neutrality goal because its aim is to be as neutral as possible with respect to the allocation of resources in the private sector. In section III, classification is measured against this neutrality goal.

The fifth section touches on some administrative issues concerning classification. It discusses the two alternative ways of implementing classification and the relative merits of each. Also discussed is the cost of implementing classification.

The final section summarizes the paper.

II. History

Property was originally singled out as a basis for levying taxes because it was thought that the extent of a man's property was a good measure of his ability to pay taxes. Market value was not always used as the measure of the extent of his property, however. In many states, the assessed value of certain items of property was set by state statutes. These statutory valuations were often rather arbitrary, however; and many taxpayers apparently felt that the valuations were sometimes manipulated to provide special treatment to certain well-placed taxpayers. In the words of a disgruntled Ohio taxpayer, there was a need to free "man, as such, his business, occupation, and profession from legislative caprice." [2]

It was to remedy that deficiency that the uniformity principle was advanced. The principle holds that all taxable property ought to be taxed at the same fraction of market value. In effect, it takes the assessment process out of the hands of the legislature, and establishes market value as the single criterion for assessments. Provided that the assessment of property is done correctly, the uniformity principle guarantees impartial treatment for all taxpayers. By the Civil War, the uniformity principle was enshrined in the constitutions of many states.

The uniformity principle was molded in a simple time, however, a time in which all property was basically similar. The American Industrial Revolution, which began after the Civil War, changed that by creating many types of property that had no counterpart in earlier times. To many, it seemed unreasonable that all these types of property should be taxed at the same rate. In the words of Simeon Leland, an early advocate of classification, "Different types of property are not possessed of the same capacity for throwing off taxes onto other property and persons." [3] He therefore thought it necessary to levy property taxes with an eye toward their final incidence, rather than their initial impact. If that requires some types of property to be taxed at higher rates than other types, so be it. In Leland's view, uniformity was no longer consistent with the ability-to-pay criterion that had spawned the property tax in the first place.

In fact, most states did adopt a form of classification, but not for the reason outlined above. It was done instead as a means of giving special treatment to intangible property, i.e., bank accounts, stocks,

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[2] See Jens Peter Jensen, "Property Taxation in the United States," Chicago: University of Chicago Press, 1931.

[3] Simeon E. Leland, "The Classified Property Tax in the United States", Boston: Houghton Mifflin Company, 1928, p. 129.

bonds, etc. The problem with taxing intangibles is two-fold. First, intangible property is easily concealed from the tax assessor. Secondly, it is highly mobil. Accordingly, if bank deposits were taxed, for instance, taxpayers could withdraw their deposits just before assessment day and place them temporarily in banks in other jurisdictions or in non-taxable federal securities.[4]

For both of these reasons, a tax on intangibles is difficult to enforce. It is likely to catch only those taxpayers who are either too honest or too ignorant to avoid it.

The first attempt to deal with this problem (and the first use of the classified property tax) was to classify property as either tangible or intangible and to tax intangible property at a lower rate. This was not a concession to the argument put forward by Leland, but was done instead in the misguided belief that taxpayers would voluntarily pay the tax on intangibles if the rate were low enough. Eventually, this experiment with classification gave way to a simple system of exemptions for intangibles.

The classification of real property was also introduced in a few states; but, here again, Leland's argument did not play a crucial role. Typically, classification in these states began as a de facto system. That is, certain classes of property were assessed at lower rates than others even though the law dictated that all property be assessed at the same rate. Next, the system was challenged in court by the owners of property that had been unfairly treated, or a ruling in a related area made it clear that a suit brought by these owners would be successful. Foreseeing the imminent demise of it, politicians acted to make the de facto system legal. This is essentially the path taken by Alabama,[5] Arizona,[6] Tennessee,[7] Illinois,[8] and to some extent, Minnesota.[9]

Because of its history, classification of real property has acquired a rather tarnished image. Many tax reformers who have fought for competent and clean administration of the property tax regard classification as a way of legitimizing sloppy administration or political tinkering. From a historical perspective, these critics are not far wrong. Classification has been an escape route from reform in many instances. Rather than bringing assessment practice into conformity with the law, many states have used classification to bring the law into conformity with practice. Consequently, many experts on local public finance have come to regard classification not so much as a reform of the property tax but rather as an admission that the property tax cannot be administered fairly and impartially.

While this attitude certainly accounts for some instinctive opposition to classification, I do not believe it should have any bearing on the decision to classify in the District of Columbia. This is because the

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[4] According to Netzer, "This shift [in bank deposits] is so large in Cook County, Illinois, that it has a discernible impact on Treasury bill yields." Dick Netzer, "Economics of the Property Tax". Washington, D.C.: The Brookings Institution, 1966, p. 1941.

[5] Letter to the author from Mr. Carroll H. Stough, Valuation Supervisor, Department of Revenue, State of Alabama, December 22, 1976.

[6] See "The Property Tax in a Changing Environment," Washington, D.C., Advisory Commission on Intergovernmental Relations, 1974.

[7] Letter to the author from Mr. George M. Tidwell, Director, Division of Property Tax Assessment, State of Tennessee, December 8, 1976.

[8] See Glen W. Fisher, "Taxes and Politics: A Study of Illinois Public Finance," Urbana: University of Illinois Press, 1969.

[9] See Rolland F. Hatfield, "Report to the Governor's Minnesota Property Tax Study Advisory Committee."

District is not a jurisdiction that must resort to classification to legalize a de facto classification; by most accounts, the assessment of market values in the District is not thought to favor any one class.[10] Thus, the District faces the classification issue with a clean slate. It has the luxury of considering classification based on its merits alone.

Minnesota's experience with classification does suggest another issue, however, which is certainly relevant to the District of Columbia. Classification in Minnesota began in 1913 with the establishment of four classes of property. That number has expanded ever since and at last count was over twenty. The way that this happened and its effects are ably summarized by Rolland Hatfield who was Commissioner of the Minnesota Department of Taxation:

> Another observation that I think you can make about classification of property is that there is no logical stopping place once you start a classification of property. . . . The reason for this is that once you have classification of property, experience has shown that it is extremely easy to add another class. This is because if the proposed new class is to be assessed at a lower fraction than the average of classes previously assessed, then all the people who will gain from that will appear in the legislature and will fill the halls to overflowing. If that legislation passes and you reduce the tax base, you increase everybody else's taxes, but they are not aware of it and they do not appear in opposition. The point is that under the classification system, once it is started, our experience has been that there is no way to stop it effectively. Therefore, as you change the various classes in the classification system you bounce the little white ball of taxes around so that it shifts constantly every time you make a change.[11]

In other words, the decision to classify may be the first step on a slippery slope.

Since this is an impontant point, it deserve some elaboration. First of all, the argument is a political one, not an economic one. It is an argument about how a legislative body, like the City Council, will tend to act over time if classification is initiated. It is not an argument about the merits of any one classification. To illustrate, let us suppose that the D.C. City Council were faced with the problem of raising more property tax revenue to pay for additional services. One course might be to raise the tax rate on all property, but another possibility might be to create a classified property tax and raise the rate on commercial property only. Under certain circumstances, that action in and of itself may be entirely justifiable. For the sake of the argument, let us suppose that it is.

Hatfield's point is that while the first decision to classify may be entirely justifiable, it is only the first step. Others will surely follow. For example, owners of retail stores might feel that they were unfairly lumped together with larger commercial office buildings. Consequently, they may petition the City Council for a new class, retail property, with a tax rate below that of other commercial property.

Now of course the reclassification and rate reduction sought by the owners of retail stores will not pass just because they petition for

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[10] This has not always been true. For an undetermined period before the passage of the Property Tax Act of 1974, residential property was assessed at a lower percent of market value than commercial property. Beginning in 1969, the D.C. Department of Revenue began a program to slowly upgrade residential assessment until they reached the level at which commercial property was assessed. This program was brought to light in June, 1973, in a suit brought by Gil Hahn in behalf of some homeowners who were experiencing higher assessments. See the Washington Post, June 5, 1973, through June 8, 1973.

[11] Rolland F. Hatfield, "Minnesotas Experience with Classification," in "The Property Tax: Problems and Potentials,' Princeton: Tax Institute of America, 1967, p. 242.

it. After all, they must convince the City Council. But Hatfield's argument is that, because of the way that petition appears to other taxpayers, it is quite likely to pass. This is because the benefits of the reclassification are direct. Furthermore, they go to an identifiable and easily organized group, namely the owners of retail stores. Thus, it is quite likely that the side favoring the reclassification will be well-represented and effective in its lobbying efforts.

On the other hand, the costs of the reclassification and rate reduction for retail property are less direct, and they are borne by a much more diffuse group, namely all taxpayers other than the owners of retail stores. In an immediate sense, these taxpayers may perceive no cost at all in the proposed reclassification. After all, their tax rates would be unchanged, initially at least. But, at those rates, revenue would be less than it otherwise would have been without the reduction in the rate on retail property. Consequently, tax rates must be increased for all taxpayers, and this increase will fall directly on taxpayers other than the owners of retail stores. The basic point is that whenever one group seeks a reduction in its rate it is also increasing the relative share of the tax burden for every other class of property. However, since this change in relative shares works in an indirect fashion, it may not be as readily perceived by the taxpayers whose share is being increased.

Furthermore, even if these other taxpayers correctly perceive their interests, they may find it difficult to organize. This is because they are large in numbers and the cost of the reclassification to each one may be fairly small. Thus, it is unlikely that they will be as organized and effective in presenting their case before the City Council as the owners of retail stores will be. Consequently, the reclassification of retail stores is likely to pass.

Once the owners of retail stores have won their case, other, equally deserving groups of property owners will be ready to present their case. And, in each case, owners of that class of property for which a reclassification is sought will be fully represented while the other side, that of the taxpayers in general, will be poorly organized and badly represented. Thus, one classification scheme merely invites another, and, after a while, the system may fail to reflect its original purpose.

The line of reasoning adopted by Hatfield is familiar. Its most frequent use is in the context of import tariffs. There, the benefits of a tariff on the imports of a good are concentrated among a small group of domestic producers of that good. The costs, on the other hand, are spread across consumers throughout the nation. As a consequence, those seeking a higher tariff have leverage far exceeding the merits of their case. One conclusion reached by those familiar with the process of tariff-setting is that it is dangerous for legislative bodies to consider one tariff at a time. It is far better to consider a general tariff policy that applies across the board.

In the same way, it may be dangerous for legislative bodies to consider the tax rate on individual classes of property independently of the rates on other classes. But, this is exactly the process that classification invites. It is also the process that the uniformity principle was designed to forestall. Indeed, the debate about uniformity versus

classification harkens back to the earlier period of statutory valuations, the period that spawned the uniformity principle. During that period, legislatures had leeway in the differential taxation of property similar to what they would have had under classification. It was the apparent abuse of that power that led to the unformity principle.

This argument against classification was anticipated by its early advocates. Leland wrote:

> These arguments reveal a distrust of popular government. They illustrate how one group seeks to tie the hands of coming generations by insisting upon constitutional restraints upon legislative actions. The whole notion of inhibitions in the fundamental laws of state is inconsistent with the belief in popular government, majority rule, or with progress of economic and sound life. The "dead hand" too long has been in control of the tax legislation.[12]

Leland went on to buttress his argument by claiming that classification in Minnesota had indeed confirmed his trust in popular government. Leland was writing in 1928. At that time, classification in Minnesota was only fifteen years old. Had he been writing today, it is doubtful that he would have cited Minnesota in support of his case.

III. Neutrality

In a market economy such as ours, prices act as signals to guide the allocation of resources. If markets are working correctly (if there are no market failures), these price signals will guide the actions of buyers and sellers so that an efficient allocation of resources is reached. An allocation is efficient if no reallocation of resources can improve the welfare of at least one individual without worsening the welfare of any other.

Taxes distort the price signals of the market. They do this by driving a wedge between the prices faced by sellers and the prices faced by buyers. As a consequence, the allocation of resources will no longer be efficient. That is, some reallocation of resources would make everybody at least as well off and somebody definitely better off. There are some exceptions to this general tendency of taxes to lead to allocative inefficiency. If there are market failures, for example, taxes may actually serve to improve the allocation of resources. In general, however, they will not.

The extent of the inefficiencies created by a tax system is measured by the deadweight loss of the system. The deadweight loss is the amount of income necessary to restore all individuals to their pre-tax welfare minus the amount of the revenue raised by the tax. Naturally, one of the goals of tax policy is to minimize this deadweight loss. Since the deadweight loss is due to resource misallocation, another way of expressing this goal is for the tax system to be as neutral as possible in its effect on the allocation of resources in the private sector. This is the so-called neutrality goal.

Deadweight loss may arise from two different sources: the failure to produce a given set of outputs at least cost and the failure to produce that combination of outputs that best satisfies consumers. The first type of inefficiency, which I shall refer to as an input misalloca-

[12] Leland, op. cit., p. 138.

tion, exists when by reallocating resources between different producers more of one good can be produced without decreasing the amount of any other good produced. A tax system will cause input misallocations when factors of production are taxed at different rates in different sectors. As a consequence, different producers will face different factor prices. A producer facing a lower price for some factor because of a lower tax on it will use too much of the factor relative to that used by a producer who faces a higher price for the factor because of a higher tax on it. By rearranging the allocation of factors between the two producers, one producer could increase his output without the other having to decrease his. In other words, more output could be produced with the same input.

Deadweight loss may also be caused by what I refer to as an output misallocation. An output misallocation exists when consumer welfare could be improved by producing more of one good and less of some other good. A tax system will lead to an output misallocation when the final outputs of the production sector are taxed. In that case, a wedge will be driven between the prices that consumers pay for goods and services and the price that producers receive for them. In other words, consumers will face different market signals than producers. If we compare two final consumption goods, one of which is taxed and the other untaxed, too little of the taxed good will be produced relative to the amount of the untaxed good that is produced. A transfer of resources from the production of the untaxed good to the production of the taxed good would increase consumer welfare.

Naturally, one of the goals of tax policy is to minimize deadweight loss. Toward that end, economists have investigated the properties of a tax system designed to achieve this goal.[13] Two general conclusions emerge from that literature. First, an optimal tax system (one that minimizes deadweight loss) does not create input misallocations. Thus, an optimal tax system would not include any tax that taxed factors at different rates in different sectors. Accordingly, the problem of minimizing deadweight loss comes down to minimizing losses due to output misallocations. The second conclusion of the optimal taxation literature is that the goal of minimizing output misallocations is achieved by taxing most heavily those goods with the most inelastic demand.

How does a classified property tax stack up against the criterion of minimizing deadweight loss? First note that real estate can begarded as an input to the production process. Therefore, if real estate is to be taxed, it ought to be taxed uniformly according to the optimal taxation literature. Obviously, a classified property tax would violate this rule because it would tax real estate in different land uses at different rates. Thus, classification conflicts with the goal of raising a given amount of tax revenue in a way that minimizes deadweight loss.

Despite this objection to classification, suppose that a decision was made to classify. The next question to ask is which classes of property ought to be taxed most heavily in order to minimize deadweight loss?

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[13] See Peter A. Diamond and James A. Mirlees, "Optimal Taxation and Public Production, American Economic Review," vol. 61, 1971, pp. 8–27.

The optimal taxation literature suggests that those classes of property with the most inelastic demand ought to be taxed most heavily.

But, this prescription might easily conflict with distributional goals. That is, the classes of property that ought to be most heavily taxed for efficiency reasons may be the same classes of property that ought to be least heavily taxed for distributional reasons. In that case, efficiency losses must be weighed against distributional improvements. This is the old problem of trading off the size of a pie against the fairness with which the pie is divided.

One way of dealing with this trade-off is to make it explicit. This I do by including estimates of the deadweight loss as part of the burden of the tax to be distributed. That is, in the following section on the distributional consequences of classification, the burden of the tax is the tax revenue raised plus the deadweight loss. This burden is then allocated among functional groups and income classes. Thus, efficiency losses are a part of the distributional consequences of a tax in the sense that the higher the deadweight loss, the greater the burden that each income class must bear. These issues will be discussed in more detail in the next section.

There is one conclusion about efficiency losses that does stand independently of distributional considerations: classification produces an unnecessarily large deadweight loss. This conclusion is independent of distributional considerations because the distribution of the burden that can be achieved by taxing different factors (different classes of property) at different rates can also be achieved by taxing outputs at different rates. The advantage of the latter is that its total burden will be less because the deadweight loss is less. Thus, though the relative burdens among classes will be the same, the absolute burden for each class will be less.

IV. Incidence

Who pays the property tax in the District of Columbia and how would that be altered by classification? A crucial first step in addressing those questions is realizing that the property tax is often shifted from its point of initial impact to other persons or property. The answer to those questions depends therefore upon how classification changes the incidence, or final resting place, of the property tax.

Of course, the incidence of a classified property tax depends upon the particular classification used and the relative tax rates for each class. There is, however, one particular classification that deserves special attention in this paper. In 1976, the D.C. City Council considered a proposal that would have essentially created a classified property tax by legislating different tax rates for commercial and residential real estate. The proposal, as originally discussed in January 1976,[14] was to increase the tax rate on commercial real state and apartment buildings from $1.83 to $2.19 per $100 of assessed valuation. The proposal was later modified to exclude apartment buildings from the tax increase and to reduce the proposed rate on commercial buildings to $2.16. In that form, the proposal passed a preliminary vote

[14] "Barry Suggests Tax Package $44 Million Below Mayor's," Washington Post, January 17, 1976.

of the Council.[15] The proposal was not finally enacted, reportedly because of difficulties in working out certain administrative details,[16] but variants of it still appear to be on the Council agenda.

This particular form of the classified property tax is relevant for this paper, not only because it was proposed by the City Council, but also because it is representative of most classifications now in use. That is, the favorable treatment of residential property relative to commercial and industrial property is fundamental to all these classifications. The Council proposal captures this characteristic in its most basic form. Furthermore, classification has been advocated recently in states such as California precisely because it would allow a shift in the impact of the property tax from residential property onto commercial property. It appears, therefore, that the Council proposal captures the key element of the classified property tax in practice. Thus, in what follows, I will estimate the incidence of the tax increase on commercial property proposed by the D.C. City Council. The incidence of that tax increase will then be compared with the incidence of the two other tax increases. One is a uniform increase in the rate on commercial and residential real estate; the other is an increase in the rate on residential real estate only. In both of these alternatives to the Council proposal, the size of the tax increase is set so that the amount of revenue that would be raised equals the amount that would be raised under the Council proposal.

Estimating the incidence of each of these tax increases is really a process of comparing the prices that exist in the D.C. real estate market today with those that would have existed today if the tax increase in question had been enacted. This comparison is made under the ceteris paribus assumption that all other external forces are the same in both situations. It will also be assumed that the supply of real estate has fully adjusted to the tax increase. In other words, it will be assumed that the real estate market has returned to a long-run equilibrium after the tax increase. Thus, in estimating the incidence of the tax increase, I am asking: What if the tax increase were enacted and fully adjusted to? How would that hypothetical situation differ from the situation that exists today?

The key to answering this question is understanding the process by which land is allocated to different uses. The allocation of land between commercial and residential uses depends on the return that landowners earn in either of these two uses. The return a landowner earns is the rent he receives from the improvements on his land minus the cost of capital invested in those improvements, his property taxes, and the costs of maintenance and depreciation. The cost of that capital is the sum of the opportunity cost of his equity in the improvements plus the interest cost on the debt he must incur to cover the remainder of the cost of improvements. By the opportunity cost of his equity, I mean the amount per period he could earn if his equity were invested in something else.

Now some landowners will not rent out the improvements on their sites but will instead use this real estate themselves. In that case, how-

[15] "Council Approves Tax, Fee Increase," Washington Post, February 21, 1976.
[16] "City Council Enacts Tax Rise Package," Washington Post, March 12, 1976.

ever, there is an opportunity cost of using that real estate. That cost is precisely the market rent of the real estate because that is the amount the real estate could earn if it were rented out.[17] Thus, no matter what the tenure status and financing arrangements, the return on a plot of land can be figured as the rent of the improvements on the land minus property taxes, the annual cost of improvements and depreciation and maintenance costs.

A landowner may choose between two alternatives in using his land. He may develop it for commercial use or he may develop it for residential use. Now, of course, at any point in time, his choices are constrained by the improvements currently on the site. In the long-run, however, this will not be a constraint, and he will develop his land for that use which earns the highest return.

If, at some time, residential real estate earns a higher return, then more land will be developed for residential use. This expanded supply will drive down the rent on residential real estate and thus the return to it. This process will continue until the returns in commercial and residential real estate are equalized. At that point, there will be no incentive for change. Similarly, if the return to land in commercial use exceeds that in residential use, more commercial real estate will be built until the returns in both uses are equalized. Thus, there is a natural tendency for the return in both uses to be equalized, and when that happens the real estate market is in long-run equilibrium.

The allocation of land between uses is considerably more complicated than this in reality. Perhaps the most important complication is that land is not all the same. Some of it is better situated for certain uses than others. Also, the land market is fettered by a number of laws and regulations, the most notable of which are zoning and rent control. I will discuss these complicating factors later in this paper. In fact, I will argue that these complications can be easily accounted for without much change in the conclusions reached from the simple model of land allocation that I have considered thus far.

Let us suppose, therefore, that the real estate market is in a long-run equilibrium and that suddenly a tax increase on commercial real estate is enacted. Immediately, the return to land used for commercial real estate decreases. Residential uses of land are now more profitable than commercial uses, and so some owners of land now in commercial uses will convert to residential uses. The first to convert will be those who can convert with minor adjustments. For instance, townhouses that are now used for offices can be easily converted back to their original use as residences. In the longer run, development decisions would also be altered. Land that was formerly more profitable as the site for a commercial building may now be more profitable as the site of an apartment building. In any event, the supply of residential real estate would increase and the supply of commercial real estate would decrease.

This switch from commercial uses to residential uses would affect the rents of real estate in the city. As the supply of residential real estate expands, its rent must decrease as long as demand for it is not

[17] This is not strictly true for owner-occupied dwellings because imputed gross rent is not subject to the Federal income tax.

perfectly elastic. Thus, the return on land in residential use will decrease. Similarly, as the supply of commercial real estate decreases, its rent must increase as long as demand for it is not perfectly elastic. Thus, its return must increase. Consequently, as the transformation of land from commercial use to residential use continues, the returns to land in those two uses converge. When the returns are finally equalized, a new equilibrium is reached.

Implicit in the move to a new equilibrium is the assumption that the price of capital does not change. That is, it is assumed that the price of capital is unaffected by any changes in the net demand for capital brought about by the adjustments to the tax increase on commercial real estate. This is a standard assumption in property tax incidents studies and is justified on the grounds that capital is extremely mobile between communities and that changes in the demand for capital in any one community will not be large enough to affect its price.

This traditional assumption has been modified somewhat in recent years by the "new view" of property tax incidence.[18] The new view maintains that it is acceptable to assume that the supply of capital is perfectly elastic to any one community in isolation, but it is not acceptable if several or all communities act in concert. An example of the latter circumstance would be a federal program to encourage localities to replace the property tax with some other revenue source. Then, the demand for capital in each jurisdiction that switched to the new source would increase, and even though each individual increase would be small, the sum of all those increases could be substantial. Therefore, the price of capital would rise. In this paper, however, I am examining the effects of classification in D.C. assuming that it is acting independently of other jurisdictions. According to the new view, therefore, this is precisely the circumstance where it is appropriate to assume that the price of capital is unaffected by the tax change.

As I have demonstrated previousy, however, other prices will change as a result of the tax increase on commercial real estate. The rent of commercial real estate will be higher, the rent of residential real estate will be lower, and the rent of land (the return on land) will be lower. Thus, we can distinguish three groups of individuals who will be affected differently by the tax increase. First, the customers of commercial establishments will be worse off because the prices they pay for the goods and services of those establishments must be higher to offset the increased rent that those establishments must pay for real estate. Secondly, the occupants of the District's housing will be better off because the rents they pay will be lower. Thirdly, landowners (both residential and commercial) will be worse off because the rent of land will be lower.

The size of these three effects depends on what happens to land rents as a result of the tax. If land rents do not change much, most of the burden of the tax will be passed forward to the customers. If land rents drop considerably, landowners will bear much of the burden; and occupants will receive a substantial benefit.

The crucial element in determining the size of the decline in land rents is the elasticity of demand for commercial real estate relative to

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[18] The new view is discussed in Henry J. Aaron, "Who Pays the Property Tax?" Washington, The Brookings Institution, 1975.

the elasticity of demand for residential real estate.[19] To see this, consider the following two scenarios. In Scenario I, the demand for commercial real estate is elastic relative to the demand for residential real estate. In that case, the tax increase will substantially reduce the demandfor commercial real estate and thus the demand for land by the commercial sector. Since the demand for residential real estate is relatively inelastic, this excess supply of land cannot be absorbed without a substantial reduction in land rents.

In Scenario II, the demand for commercial real estate is inelastic relative to the demand for residential real estate. Then, the demand for commercial real estate and thus the demand for land by the commercial sector will not decrease by much as a result of the tax increase. Furthermore, the land released from the commercial sector can be absorbed in the residential sector without a large decline in land rents. The rent decline need not be large because demand for residential real estate is relatively elastic.

An increase in the tax rate on commercial real estate will therefore have different incidence patterns under two different scenarios. In Scenario I, the demand for commercial real estate is elastic relative to the demand for residential real estate. In Scenario II, the reverse is true. Landowners will bear a larger tax burden in the first scenario than in the second. Customers will bear a larger burden in the second than in the first.

The scenario that best fits the circumstances of the District of Columbia is open to debate. Rather than attempting to resolve that debate in this paper, I have simply estimated the incidence of the Council proposal under both scenarios. The method and data used for this estimate are discussed in Appendix II. The results are summarized in Table 1.

The incidence estimates are broken down into various categories indicated in the left-hand column of Table 1. The first category is customers of commercial establishments. This includes customers of retail stores, clients of legal and financial organizations, patrons of restaurants and hotels, members of trade organizations, etc. In short, it includes anyone who pays for a goods or service provided by an establishment that occupies commercial real estate in the District of Columbia. The second category is occupants of housing in the District of Columbia. This includes all renters of both single-family and multifamily dwellings as well as all homeowners in the District of Columbia. A homeowner is viewed as paying a rent (an opportunity cost) for the privilege of occupying his home.

The third category is landowners. This includes all persons or organizations that own land in the District of Columbia, including homeowners. Essentially then, a homeowner appears twice in this table: once as a landowner and once as a renter. If the price of residential real estate declines, therefore, he loses as a landowner but gains as an occupant. His net gain would therefore be zero, and his real position would be unchanged. One important thing to remember about land-

[19] As Appendix II demonstrates, the crucial element is actually the elasticity of the commercial sector's derived demand for land relative to that of the residential sector. The elasticity of the derived demand for land in any sector is, however, a function of the elasticity of demand for real estate in that sector.

owners, however, is that future losses will be capitalized into land values. Therefore, if the rent of a plot of land is permanently reduced, its present owner will incur all of these losses even if he were to seal the land. This is because these future losses would be capitalized into the sale price of the land.

TABLE 1.—INCIDENCE BY FUNCTIONAL CATEGORY

[Figures in thousands of dollars]

Category	Scenario I (elastic demand for commercial real estate)			Scenario II (inelastic demand for commercial real estate)		
	Council proposal [1]	Option A [2]	Option B [3]	Council proposal [1]	Option A [2]	Option B [3]
Customers [4]	−8, 283	−2, 509	+1, 892	−12, 577	−4, 097	+4, 779
Occupants [5]	+6, 206	−3, 381	−10, 688	+2, 276	−5, 031	−12, 735
Landowners [6]	−12, 987	−7, 674	−3, 624	−4, 763	−6, 885	−9, 156
Deadweight loss [7]	4, 487	2, 987	1, 845	1, 241	2, 190	3, 287
Total revenue [8]	10, 577	10, 577	10, 577	13, 823	13, 823	13, 823

[1] An increase of $0.33 per $100 assessed valuation in the tax rate on commercial real estate.
[2] A uniform increase in both commercial and residential tax rates that would raise the same revenue that the council proposal would raise.
[3] An increase in the tax rate on residential real estate only that would raise the same revenue that the council proposal would raise.
[4] Customers of commercial real estate in the District of Columbia.
[5] Occupants of residential real estate in the District of Columbia.
[6] Owners of commercial and residential land in the District of Columbia.
[7] The total loss in real income to customers, occupants, and landowners minus the tax revenue raised.
[8] The tax revenue raised by the tax increase.

The fourth category is the deadweight loss of the tax increase. This concept was discussed in Section III of this paper. The deadweight loss is the sum of the losses incurred by customers, occupants, and landowners minus the tax revenue raised. The tax revenue raised is the fifth category in Table 1.

The incidence of the tax increase proposed by the City Council is given in the first and fourth columns of figures in Table 1. The first column gives the estimates under Scenario I, where the demand for commercial real estate is relatively elastic; and the fourth column gives the estimates under Scenario II, where the demand for commercial real estate is relatively inelastic. Note to begin with that about $11 million in tax revenue is raised under Scenario I and about $14 million under Scenario II. The difference can be accounted for in the following way: If demand for commercial real estate is elastic, as it is in Scenario I, increasing the tax on commercial real estate reduces the supply of commercial real estate, and hence the tax base, considerably. On the other hand, if demand is relatively inelastic, the tax base will not be as sensitive to an increase in the commercial tax rate.

This same phenomenon is demonstrated by observing the deadweight loss figures. The deadweight loss under Scenario I is about $4 million as opposed to about $1 million under Scenario II. This results because, as was pointed out in Section III, deadweight loss is minimized by taxing most heavily the least elastic commodity. Accordingly, the deadweight loss of a tax increase on commercial real estate is less if the elasticity of demand for it is less as it is in Scenario II.

The incidence figures verify the qualitative conclusions that were reached above. Under both scenarios, customers of commercial establishments are made worse off by the tax increase on commercial real estate. Under Scenario I, customers lose about $8 million annually; and under Scenario II, about $13 million. Landowners also suffer losses: about $13 million under Scenario I and almost $5 million under Scenario II. Occupants, however, are actually better off than before. Under Scenario I, they gain more than $6 million, and in Scenario II they gain about $2 million. This is due, remember, to the decrease in the rent of housing that results from the increase in taxes on commercial real estate.

Comparison of the relative magnitudes of gains and losses between Scenario I and Scenario II reveals that customers of commercial establishments are better off in Scenario I than Scenario II and that landowners are worse off in I than in II. This is because in Scenario I the demand for commercial real estate is relatively elastic. Consequently, most of the tax is shifted backward to landowners and comparatively little of it is passed forward to customers. In Scenario II, the reverse is true. Notice also that occupants are better off in Scenario I because land rents and thus housing rents decline more in Scenario I than in Scenario II.

For purposes of comparison, I also estimated the incidence of two other tax increases. The first, called option A, is a uniform increase in the rate on commercial and residential property. The second, called option B, is an increase in the rate on residential real estate only. The methods used to estimate the incidence of each are discussed in Appendix II, and the results are summarized in Table 1. In each scenario, the size of the tax increase for each option was set so that it would raise the same amount of tax revenue as the Council Proposal would have raised in that scenario.

The incidence estimates for option A, the uniform increase, are given in the second and fifth columns of figures in Table 1. Notice that in both scenarios, all three groups suffer losses. This is because the supply of both commercial and residential real estate is decreased by a uniform increase. Therefore, the rents of both increase.

Notice that for a uniform increase customers are better off in Scenario I than in Scenairo II. In Scenario I they lose $2.5 million; and in Scenario II, about $4 million. This is because with the demand for commercial real estate relatively elastic, as it is in Scenario I, the price of commercial real estate cannot rise as much as it does in Scenario II. Thus, in Scenario II, more of the tax increase is passed backward to landowners. This is also revealed by comparing the welfare of occupants in Scenario I and II. They also are better off in Scenario I because more of the tax is passed backward than in Scenario II.

Option B, the increase in residential tax rates only, is in some sense, the exact opposite of the Council Proposal. The incidence estimates for Option B are given in the third and sixth columns of figures in Table 1. Here it is occupants of housing who bear the brunt of the tax increase—$10 million under Scenario I and almost $14 million under Scenario II. Landowners are also losers, as they are under all tax increases considered here, although for option B

they are better off under Scenario I than under Scenario II. The customers of commercial establishments are made better off by the increase in residential tax rates. The logic here is exactly the same as it was for the increase in the commercial tax rate only. An increase in the residential tax rate decreases the supply of residential real estate, driving up its rent, and increases the supply of commercial real estate, driving down its rent. As a consequence, the customers of commercial establishments reap a gain in the form of lower prices for the goods and services they buy from those establishments. The gain is about $2 million under Scenario I and almost $5 million under Scenario II.

While the numbers may differ between scenarios, some general conclusions hold for both scenarios. Under both, customers of commercial establishments are worst off if the tax increase is confined to commercial real estate only, and they are best off if it is confined to residential property. For occupants, the reverse is true. They are best off under the Council Proposal and worst off under option B. Landowners are losers for each of the three tax increases.

Most households are a member of at least two of these functional categories. It is therefore of some interest to net out these gains and losses to find the incidence of these proposals by income class and jurisdiction. In their study of fiscal interactions in the D.C. area,[20] Greene, Neenan and Scott did in fact convert incidence estimates by functional area into incidence estimates by jurisdiction and income class. For each functional category, they constructed a series that allowed them to allocate the tax burden for that functional category to various income classes and jurisdictions. For example, the burden borne by landowners was allocated between D.C. residents and non-D.C. residents by data they compiled about the percentage of land in District of Columbia owned by nonresidents. The burden borne by D.C. residents was then allocated to various income classes by data on the distribution of property ownership by income class. A similar procedure was followed for the burden borne by other functional categories such as customers of commercial real estate and occupants of housings.

Using their data and following their procedure, I converted the incidence estimates in Table 1 to incidence estimates by jurisdiction and income class. In Table 2, the incidence estimates by jurisdiction are presented. Two jurisdictions are considered: the District of Columbia and the rest of the Nation. The figures presented are aggregate burdens. That is, they are the net burdens borne by customers, occupants, and landowners within each jurisdiction. Thus, the burden borne by the rest of the nation of a tax in District of Columbia includes the burden borne by customers of commercial establishments in District of Columbia who live elsewhere and the burden borne by owners of land in District of Columbia who live elsewhere. Also, part of the burden borne directly by D.C. residents can be offset against federal income tax liabilities and is in that sense exported to the rest of the nation.

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[20] Kenneth V. Greene, William B. Neenan, and Claudia D. Scott, "Fiscal Interactions in a Metropolitan Area," Lexington, Mass.: D.C. Heath and Company, 1974.

Table 2 reveals that under Scenario I the burden of the Council Proposal borne by D.C. residents is only $1.3 million. It increases somewhat under Scenario II, but is still less than $3 million. In contrast, residents of other jurisdictions bear a burden of $13.7 million in Scenario I and over $12 million in Scenario II. This results because many customers of commercial real estate and many landowners are nonresidents. Much of the burden of the Council Proposal falls on these two groups. In fact, the other group, occupants of D.C. housing, actually benefit from the Council Proposal, and they all, of course, are considered to be D.C. residents.

TABLE 2.—INCIDENCE BY JURISDICTION

[In thousands of dollars]

Jurisdiction	Scenario I (elastic demand for commercial real estate)			Scenario II (inelastic demand for commercial real estate)		
	Council proposal [1]	Option A [2]	Option B [3]	Council proposal [1]	Option A [2]	Option B [3]
District of Columbia [4]	−1, 286	−6, 473	−10, 421	−2, 985	−8, 091	−13, 440
Others [5]	−13, 778	−7, 091	−1, 999	−12, 079	−7, 926	−3, 672

[1] An increase of $0.33 per $100 assessed valuation in the tax rate on commercial real estate.
[2] A uniform increase in both commercial and residential tax rates that would raise the same revenue that the council proposal would raise.
[3] An increase in the tax rate on residential real estate only that would raise the same revenue that the council proposa would raise.
[4] Customers, occupants, and landowners who reside in District of Columbia.
[5] Customers, occupants, and landowners who do not reside in District of Columbia.

The amount of the tax increase that is exported changes under option A, the uniform increase. In the Scenario I, D.C. residents bear a burden of $6.4 million; and in Scenario II, it is even higher, $8.1 million. Option B accentuates this trend with D.C. residents bearing a burden of over $10 million in Scenario I and over $13 million in Scenario II.

In a sense, the Council Proposal, Option A, and Option B are points along a spectrum of property tax options available to the District of Columbia. Between the Council Proposal and option B on this spectrum are options which would raise both the commercial tax rate and the residential tax. At the beginning of this spectrum are options that would increase the commercial tax rate more than the residential tax rate. Toward the end of the spectrum are policies that would increase the residential tax rate more than the commercial tax rate. In the middle of the spectrum is option A, the uniform tax increase. As we move from beginning to end of this spectrum, the burden borne by customers of commercial establishments decreases and the burden borne by occupants of D.C. housing increases. Since a large portion of the burden borne by customers is exported and since a small portion of the burden borne by occupants is exported, a move from beginning to end on this tax spectrum will decrease the amount of the tax exported.

In Table 3, the burden borne by D.C. residents is distributed according to income class. Each income class was first allocated its portion of the burden borne within D.C. of each of the three functional categories. Then, the total burden (the sum of customers', occupants', and landowners' burden) within each income class was divided by the total income earned by members of that income class. This gives the

total burden borne by members of that income group as a percentage of their income. These figures are reported in Table 3.

TABLE 3.—INCIDENCE BY INCOME CLASS, DISTRICT OF COLUMBIA RESIDENTS

[Figures are percent of annual household income]

Income class [1]	Scenario I (elastic demand for commercial real estate)			Scenario II (inelastic demand for commercial real estate)		
	Council proposal [2]	Option A [3]	Option B [4]	Council proposal [2]	Option A [3]	Option B [4]
0 to $3 000	+0.074	−0.414	−0.785	−0.069	−0.526	−1.009
$3 000 to $4 000	+.034	−.213	−.401	−.053	−.274	−.509
$4 000 to $6 000	+.013	−.160	−.292	−.056	−.207	−.368
$6 000 to $7 500	+.002	−.139	−.247	−.057	−.180	−.311
$7 500 to $10 000	−.006	−.124	−.213	−.057	−.159	−.268
$10 000 to $15 000	−.018	−.119	−.187	−.061	−.149	−.242
$15 000 to $25 000	−.048	−.111	−.159	−.063	−.135	−.211
$25 000 and above	−.053	−.087	−.114	−.055	−.104	−.151

[1] Income of household in 1970 census.
[2] An increase of $0.33 per $100 assessed valuation in the tax rate on commercial real estate.
[3] A uniform increase in both commercial and residential tax rates that would raise the same revenue that the council proposal would raise.
[4] An increase in the tax rate on residential real estate only that would raise the same revenue that the council proposal would raise.

As in the other tables, a positive figure in this table indicates a net gain to an income class. Thus, the Council Proposal under Scenario I would actually improve the real income of D.C. households making less than $7,500. In contrast, those making over $25,000 would bear a burden equal to approximately .05 percent of their income. In interpreting these figures, keep in mind that the income figures given are for 1970.

Two general conclusions emerge from this table. First, as one moves on the spectrum of tax options from the Council Proposal to option B, the tax burden in all classes increases. For instance, for those with incomes between $10,000 and $15,000, it increases from .018 percent to .187 percent under Scenario I. A similar pattern holds for all other classes. It also holds for both scenarios. This is simply a reflection of what was revealed earlier in Table 2; the amount of the tax burden exported decreases in moving from the Council Proposal to option B. Thus, the total burden borne by D.C. residents increases, and this is reflected in the burden borne by each income class.

Secondly, in moving from the Council Proposal to option B, the burden of the tax increase becomes more regressively distributed. That is, the burden tends to fall more heavily on low-income households. In Scenario II, for instance, those with income between $4,000 and $6,000 bear a burden of .056 percent of their income under the Council Proposal and a burden of .368 percent of their income under option B. In contrast, under the Council Proposal, those with incomes between $10,000 and $15,000 pay a larger percentage of their income (.061 percent) than those with incomes between $4,000 and $6,000; but, under option B, they pay a smaller percentage. This comparison holds for virtually all other income classes and under both scenarios. In comparing only two income classes, the burden of both increases in moving from the Council Proposal to option B, but the burden of the lower income class increases by a greater proportion.

The explanation for this is as follows: The uniform tax increase places a heavier burden on households as occupants and a lighter burden on households as customers than does an increase in the commercial rate only. The increase on residential property alone places a still heavier burden on occupants and a even lighter burden on customers. Much residential property in D.C. is renter-occupied (rental units, both single-family and multifamily, constitute more than half of the residential tax base) and rent payments are less progressively distributed than are payments for the services of commercial establishments. Thus, as the burden of the tax increase shifts from customers to renters, the progressivity of the burden decreases.

From the perspective of D.C. residents, the distribution of the property tax burden is most progressively distributed under the Council Proposal. Moreover, the total burden of the tax is less since more of it is exported. An important note must be added to this, however. Greene, Neenan and Scott [21] found that the property taxes exported from D.C. were quite regressively distributed in other jurisdictions. For example, the burden of total D.C. property taxes borne by Maryland residents with incomes less than $3,000 was 8.7 percent of their income. In contrast, the burden borne by those with incomes over $25,000 was only 1.5 percent of their income. A similar pattern holds for Virginia residents. Since more of the tax increase is exported under the Council Proposal than under the other two options, the Council Proposal would have the most regressive impact on the income distribution in other jurisdictions. It appears, therefore, that the gains reaped for D.C. residents by the Council Proposal are achieved at the expense of low-income households in surrounding jurisdictions.

The incidence estimates presented in Tables 1, 2, and 3 are based on what I earlier characterized as a simple model of the land market. One simplification was the assumption that all land was equally suited for commercial and residential use. In fact, this is not true. Land in the central business district (CBD) of a city is generally more suited to commercial uses than residential uses. That is, even in a long-run equilibrium, land in the CBD will earn a markedly higher return in commercial uses than in residential uses. Thus, the city will tend to have a distinct business district, composed mainly of commercial real estate, surrounded by a residential district, composed mainly of residential real estate. At the boundary of these two districts, however, the return to land in commercial use must equal that of land in residential use.

If the tax on commercial real estate is now increased, the return to land in commercial uses will decrease. At the boundary of the commercial and residential districts, land in residential uses must now earn a higher return than land in commercial uses. Consequently, some landowners near the boundary who were previously using their land for commercial real estate may now find it to their advantage to convert to residential uses. Therefore, the supply of residential real estate will increase, decreasing its rent; and the supply of commercial real estate will decrease, increasing its rent. The decrease in the rent of residential real estate will decrease the return of land in residential uses

[21] Op. cit., page 118.

throughout the city. Thus, the tax increase is borne by customers of commercial establishments and by all landowners; occupants benefit through lower rents. This is the same conclusion reached in the simpler model.

Another potential complication is zoning. Zoning, it might be maintained, restricts the supply of land to any one use. Therefore, the transformation of land from commercial to residential uses may not be as easily accomplished as I have hypothesized that it is. It must be pointed out, however, that the purpose of zoning is to segregate incompatible uses, not to restrict the supply of land to any one use. Now it is true that for short periods of time, even well-intentioned zoning can provide artificial impediments to the expansion of certain uses. It seems unlikely, however, that these impediments will persist in the long-run.

Another complication that the simple model ignores is rent control. At this time, the effectiveness and fate of rent control in the District of Columbia seems somewhat uncertain. Suppose, however, that it was effective and permanent. How will it affect the incidence of an increase in the commercial tax rate? First of all, if the rent ceiling is at or above the market rent, rent control will have no effect. On the other hand, if rents are currently held substantially below the market level, an increase in the commercial tax rate will increase the supply of residential real estate, but it will not reduce the price of that real estate. It would be inaccurate to say, however, that occupants of residential real estate would not gain from the tax increase. The increase in residential real estate would help meet the excess demand for residences due to the rent control. In other words, some of those who were willing to rent in District of Columbia but were prevented from doing so because of the excess demand for residences could now find places. Thus, with or without rent control, occupants benefit from the Council Proposal. I conclude, therefore, that the incidence patterns generated by the simple model are at least approximately valid even when complications are introduced to the analysis.

V. Administration

There are two ways of implementing a classified property tax. The most common way is to assign different assessment ratios (the ratio of assessed value to market value) to each class and then tax assessed valuation in each class at the same rate. The other way, practiced only by West Virginia, is to assess all classes at the same rate but apply different tax rates to each class.

The advantage of the first method is that it permits a state or locality to permanently fix the relative tax rates between classes. This can be done through a constitutional provision specifying assessment ratios in each class. Annual revenue requirements can then be met by adjusting the tax rate up or down. In this way, it is possible to annually adjust property tax revenue to meet changing needs without having to simultaneously consider adjustments in the relative tax rates between classes.

The disadvantage of implementing classification through different assessment ratios is that it makes full-value assessment impossible.

That is, if the assessment ratios are different in each class, only one class at most can be assessed at 100 percent of market value. As argued by the ACIR, full-value assessment is desirable primarily because it "reduces the possibility of sloppy, politically oriented or corrupt assessments." [22] If assessments are some fraction of market value, property owners cannot readily compare the assessed value of their property against their estimate of its market value. Accordingly, they will have little idea of whether their property is over-assessed or under-assessed. In contrast, full-value assessment gives them all the information needed to make that comparison. Thus, full-value assessment tends to lead to more equitable assessments. The primary advantage of the method of classification used by West Virginia is that it would permit full-value assessment.

Another administrative issue related to classification is the taxation of so-called mixed uses. For example, if the owner of a corner grocery store lives above the store, his property is both residential real estate and commercial real estate. Ideally, the value of the real estate used as a residence should be taxed at the residential rate and the remainder should be taxed at the commercial rate. In practice, however, it will be difficult and time-consuming for the assessor to determine the proper division between commercial and residential uses. Complexities such as these will lead to increased cost in administering the property tax. The cost of implementing a commercial-residential classification in the District of Columbia has been estimated at between $150,000 and $253,000.[23]

VI. Summary

This paper has tended to verify the key argument put forward by the advocates of classification. Namely, classification has substantial power to change the distribution of the property tax burden. This was demonstrated by comparing the incidence of a tax increase on commercial real estate only with the incidence of a uniform increase in the tax on both commercial and residential real estate. Not only was more of the tax exported under the tax increase on commercial real estate only, but also the burden borne by D.C. residents was more progressively distributed. The amount of the tax exported, however, falls quite regressively on the residents of surrounding jurisdictions. Also, it must be noted that classification is less neutral in its effects on the private sector than is a uniform property tax.

It is often claimed that a classified property tax that discriminates against commercial real estate would drive businesses out of the District of Columbia. As the analysis has demonstrated, this is surely true. The size of this effect is easily exaggerated, however. In the long run, a tax increase on commercial real estate will be partly passed forward to customers of commercial establishments and partly passed backward to landowners. Therefore, it will not ultimately be paid for out of the profits of commercial establishments.

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[22] "The Property Tax in a Changing Environment," Washington, D.C., Advisory Commission on Intergovernmental Relations, 1974, page 6.

[23] See Testimony of Mr. Kenneth Back, Director, D.C. Department of Finance and Revenue, Property Tax Hearings, D.C. City Council, July 7, 1976.

A more serious objection to classification is that it may be the first step on a slippery slope. Minnesota's experience with classification has demonstrated that there is a tendency for the number of classes to multiply. Once that process has gone on for a while, the form of the tax may bear little resemblance to what it was originally intended to be. Thus, though the original motivation for classification may be entirely justifiable, the system that ultimately emerges may not be as easily justified.

Appendix I*

SUMMARY OF PROPERTY TAX CLASSIFICATIONS BY STATE

Alabama:	
Residential and agricultural	15 percent of market value.
All other property except utilities	25 percent of market value.
Utilities	30 percent of market value.
Arizona:	
Residential	15 percent of full cash value.
Agriculture	18 percent of full cash value.
Apartments	21 percent of full cash value (1978).
Commercial and industrial	27 percent of full cash value.
Utilities	50 percent of full cash value.
Railroad, air carrier, mining	60 percent of full cash value.
Illinois-Cook County Real Estate:	
Unimproved, agricultural, residential	22 percent of market value.
Apartment building (7 or more units)	33 percent of market value.
Property of not for profit corporation (not exempt)	30 percent of market value.
Commercial and industrial	40 percent of market value.
Louisiana (effective December 31, 1977):	
Unimproved land, residential	10 percent of market value.
All other	15 percent of market value.
Minnesota (real property):	
Unmined iron ore	50 percent of market value.
"Low grade" iron ore	50 percent to 48½ percent of market value.
Agricultural nonhomestead, commercial and noncommercial seasonal residential, recreational, tools, implements, and machinery which are fixtures to real property	33⅓ percent of market value.
Agricultural homestead:	
1st $12,000 of market value	20 percent.
Excess of market value over $12,000	33⅓ percent.
Nonagricultural homestead	25 percent.
1st $12,000 market value	20 percent.
Excess of market value over $12,000	40 percent.
Paraplegic Veterans and blind persons	
Montana:	
Unprocessed agricultural products	7 percent of market value.
Disabled veterans' dwellings	7 percent of market value.
Money and credit	7 percent of market value.
New industrial property	7 percent of market value.
Machines, motor vehicles and boats	20 percent of market value.
Property owned by retired persons and widows	20 percent of market value.
Real estate and improvements	30 percent of market value.
Bank shares and moneyed capital	30 percent of market value.
Merchandise, nonresidential furniture and fixtures	33⅓ percent of market value.
All other	40 percent of market value.
Mine proceeds	100 percent of market value.

* This appendix was copied from Richard P. Simpson, "An Evaluation of the Split Assessment Roll in the United States," California Taxpayers' Association, February 1977.

South Carolina:	
Owner-occupied residences	4 percent of market value.
Privately owned agricultural property	4 percent of market value.
Merchants inventories	6 percent of market value.
All other real property	6 percent of market value.
Railroads and pipelines	6 percent of market value.
Real and personal property owned by and leased to manufacturers and utilities	10½ percent of market value.
All other personal property	10½ percent of market value.
Tennessee:	
Real:	
Residential and agricultural	25 percent.
Commercial and industrial	40 percent.
Utilities	55 percent.
Personal:	
Residential and agricultural	5 percent.
Commercial and industrial	30 percent.
Utilities	55 percent.
West Virginia (tax rates):	
Agricultural personalty; intangibles	50 cents per $100 assessed value.
Residential and farmland	$1 per $100 assessed value.
All other outside city	$1.50 per $100 assessed value.
All other within city	$2 per $100 asssesed value.
Homesteads:	
1st $24,000 of market value	5 percent.
Excess of market value over $24,000, nonagricultural	40 percent.
Excess of market value over $24,000, agricultural	33⅓ percent.
Residential, other than seasonal, residential, recreational and homesteads	40 percent of market value.
Timberland	20 percent of market value.
Petroleum refineries' real estate:	
1972 assessment	30 percent of market value.
1973 assessment	33⅓ percent of market value.
1975 assessment	38 percent of market value.
1977 assessment	43 percent of market value.
All other real property	43 percent of market value.
Parking ramp structures in first class cities with 400,000 or less population:	
1972 assessment	25 percent of market value.
1973 assessment	30 percent of market value.
1975 assessment	36 percent of market value.
1977 assessment	43 percent of market value.
Housing for elderly or for low- and moderate-income families financed by direct Federal loan or federally insured loan pursuant to title II of the National Housing Act:	
Over 10,000 population	20 percent of market value.
Under 10,000 population	5 percent of market value.
Personal property:	
Household goods (county option to tax and to allow household exemption of $100 assessed value)	25 percent of market value.
Mobile homes:	
Homestead:	
1st $12,000 of market value	25 percent.
Excess of market value over $12,000	40 percent.
Nonhomestead	40 percent of market value.

APPENDIX I—Continued

West Virginia (tax rates)—Continued	
Personal property—Continued	
Structures on leased public lands in rural areas, tools and machinery—fixtures on personalty	33⅓ percent of market value.
Structures on leased public lands in urban areas and on railroad rights-of-way, systems of electric and gas utility pipelines, billboards advertising signs and devices	43 percent of market value.
No assessments for inventories, agricultural or petroleum after 1973	

Appendix II

This appendix outlines the economic model from which the incidence estimates are derived.

The real estate market is divided into two sectors, commercial and residential. The quantity of real estate in the commercial sector is denoted by X, and the quantity of residential real estate by Y.

Real estate in both sectors is produced with inputs of land, L, and capital, K. These production relationships are summarized by the production functions,

$$X = F(K_x, L_x)$$
$$Y = G(K_y, L_y)$$

where K_x and L_x are the capital and land inputs used in the commercial sector and K_y and L_y are the capital and land inputs used in the residential sector. Production in both sectors is assumed to take place at constant returns to scale.

The analysis is long run in that capital is assumed to be perfectly elastic in supply and land is assumed to be perfectly mobile between sectors. The former assumption implies that the price of capital, P_k, will be fixed, and the latter implies that the price of land, P_l, will be the same in both sectors. The supply of land is assumed to be fixed at L.

The allocation of land between sectors and the price of land will be determined in the land market. In figure 1 below, the demand for land by the commercial sector is represented by the curve DL_x. This demand curve is derived from the demand for commercial real estate and is defined implicitly by the following three equations:

(i) $F(K_x, L_x) = (P_x)$

(ii) $(P_x - T_x)\frac{\partial F}{\partial K} = P_k$

(iii) $(P_x - T_x)\frac{\partial F}{\partial L} = P_l$

where

P_x is the price of commercial real estate
$X(P_x)$ is the demand for commercial real estate
T_x is the tax on commercial real estate

A similar set of equations defines the residential sector's derived demand for land.

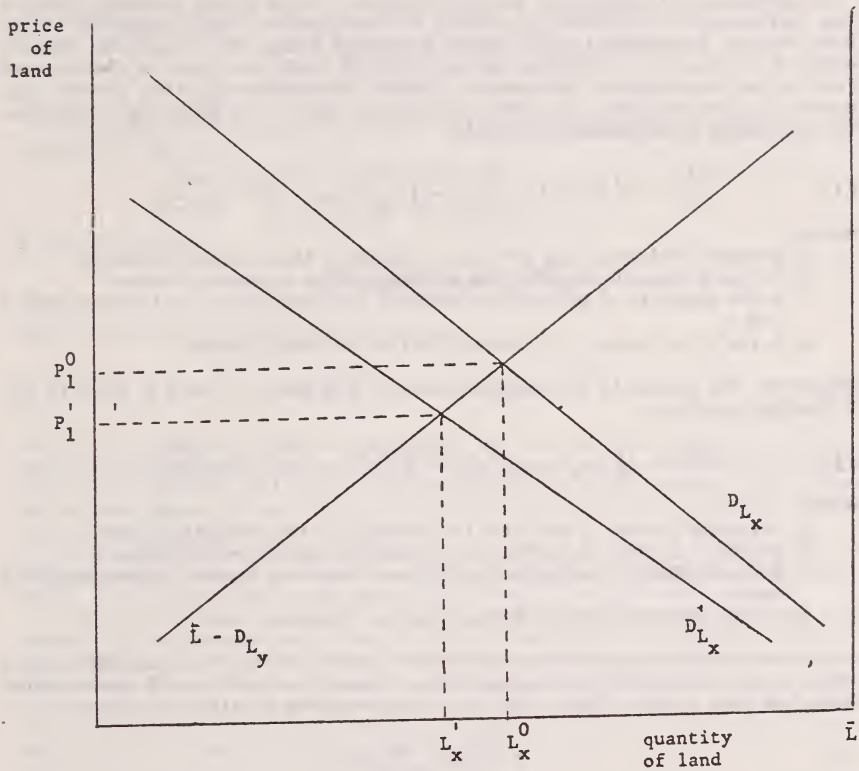

FIGURE 1

In equilibrium, the demand for land by both sectors must equal the fixed supply, $\bar{L}$. At any given price, therefore, the amount of land supplied to the commercial sector is $\bar{L}$ minus the amount demanded by the residential sector. Thus, $\bar{L}$ minus the residential sector's demand curve for land is the supply curve of land for the commercial sector. This supply curve is represented by the curve $\bar{L}-D_{Lx}$ in figure 1.

Given the conditions imbedded in these two curves, the land market is in long-run equilibrium when the price of land equals $P_L{}^\circ$. At that price, $L_x{}^\circ$ units of land will be employed in the commercial sector and $\bar{L}-L_x{}^\circ$ units will be employed in the residential sector.

Suppose now that the tax on commercial real estate is increased as it would be under the Council proposal. For any given price of land, the price of commercial real estate would now be higher than it previously was (recall that the price of capital is constant), and thus, the demand for it will be lower. This in turn means that the commercial sector's demand for land at that price will also be lower. In other words, the commercial sector's demand for land will shift to the left. Let D_{Lx}' be this new demand curve.

As a consequence of this shift in demand, the price of land will fall to P_1'. Thus, the income going to landowners will fall by the amount $-(P_1'-P_1{}^\circ)\bar{L} \equiv -dP_1\bar{L}$. Note that the return on all land will fall, not just that on commercial land. In particular, the return on residential land will fall by $-dP_L L_y$. This amount will be passed forward directly to the users of residential real estate in the form of lower rents. To the extent that the tax increase is not offset by lower land prices, it must be reflected in higher prices for commercial real estate. Thus, users of commercial real estate will bear part of the burden of the tax increase.

The other tax options considered in this paper can also be represented in figure 1. An increase in the residential tax rate only would result in a leftward shift in the residential sector's demand for land, and thus would be represented in figure 1 by a rightward shift in the curve $\bar{L}-D_{Lx}$. A uniform increase in both tax rates would be represented by a shift in both curves

A mathematical expression for the change in land prices resulting from a tax increase can be derived by solving the comparative static equations of the land market. Equations (i-(iii) above implicitly define the commercial sector's demand for land as a function of the price of land, the price of capital and the tax on commercial real estate. Totally defferentiating this system and assuming that the price of capital is constant yields the following expression for the change in the demand for land.[1]

$$(1) \qquad \frac{dL_x}{L_x} = -\left(f_k s_x + f_1 e_x \frac{P_x - T_x}{P_x}\right) \frac{dP_1}{P_1} - e_x \frac{P_x - T_x}{P_x} \frac{dT_x}{P_x - T_x}$$

where

f_k is capital's share in the after tax earnings of the commercial sector
f_1 is land's share in the after tax earnings of the commercial sector
s_x is the elasticity of substitution between land and capital in the commercial sector
e_x is the price elasticity of demand in the commercial sector

Similarly, the change in the residential sector's demand for land is given by the following equation.

$$(2) \qquad \frac{dL_y}{L_y} = -\left(g_k s_y + g_1 e_y \frac{P_y - T_y}{P_y}\right) \frac{dP_1}{P_y} - e_y \frac{P_y - T_y}{P_y} \frac{dT_y}{P_y - T_y}$$

where

g_k is capital's share in the after tax earnings of the residential sector
g_1 is land's share in the after tax earnings of the residential sector
s_y is the elasticity of substitution between land and capital in the residential sector
e_y is the price elasticity of demand in the residential sector

The condition for equilibrium in the land market is that the demand for land must equal the supply. The change in the demand for land in both sectors must therefore sum to zero. This condition is expressed in equation (3) below.

$$(3) \qquad 1_x \frac{dL_x}{L_x} + 1_y \frac{dL_y}{L_y} = 0$$

where

$$1_x = \frac{L_x}{L}$$

$$1_y = \frac{L_y}{L}$$

Equations (1), (2), and (3) can then be solved for the following expression giving the change in land prices as a function of tax changes in both sectors:

$$\frac{dP_1}{P_1} = -\frac{1_x \left(e_x \frac{P_x - T_x}{P_x}\right) \frac{dT_x}{P_x - T_x} + 1_y \left(e_y \frac{P_y - T_y}{P_y}\right) \frac{dT_y}{P_y - T_y}}{1_x \left(f_1 e_x \frac{P_x - T_x}{P_x} + f_k s_x\right) + 1_y \left(g_1 e_y \frac{P_y - T_y}{P_y} + g_k s_y\right)}$$

This is the basic equation from which all incidence estimates in this paper are derived. It also underlies previously stated conclusions about the consequences of different assumed values for the elasticities of demand in both sectors.

The change in real income for users of real estate can be calculated from the change in land prices. For the users of commercial real estate, the change in real income will be $dP_x X$ where

$$\frac{dP_x}{P_x} = \frac{P_x - T_x}{P_x} \left(f_1 \frac{dP_1}{P_1} + \frac{dT_x}{P_x - T_x}\right).$$

[1] See R.G.D. Allen, "Mathematical Analysis for Economists," London: Macmillan, 1938, 369–374.

For users of residential real estate, the change in real income will be dP_yY where

$$\frac{dP_y}{P_y}=\frac{P_y-T_y}{P_y}\left(g_1\frac{dP_1}{P_1}+\frac{dT_y}{P_y-T_y}\right).$$

The incidence of three different tax options is compared: an increase in the commercial rate only

$$\left(\frac{dT_x}{P_x-T_x}>0,\ \frac{dT_y}{P_y-T_y}=0\right),$$

a uniform increase

$$\left(\frac{dT_x}{P_x-T_x}=\frac{dT_y}{P_y-T_y}>0\right)$$

and an increase in the residential rate only

$$\left(\frac{dT_x}{P_x-T_x}=0,\ \frac{dT_y}{P_y-T_y}>0\right).$$

In each case, the tax rates are set so that they would raise the same amount of revenue. The amount of revenue raised is given by the following expression: $dR=dT_xX+T_xdX+dT_yY+T_ydY$. Note that this expression takes into account the revenue gained or lost due to the change in the tax base resulting from the tax increase.

The deadweight loss resulting from a tax increase is defined as the net loss in real income for users of real estate and for owners of land minus the tax revenue raised. That is, the deadweight loss is $dP_xX+dP_yY-dP_LL-dR$.

To be perfectly accurate, this expression should be referred to as a first order measure of deadweight loss. This is because changes in the welfare of users of real estate have been measured by what Harberger[2] has called first order terms. First order measures are standard practice in tax incidence studies, and they have an important consequence in most of those studies. Namely, as long as welfare is masured in first order terms and as long as there are no pre-existing taxes, there will be no deadweight loss. Therefore, the burden borne by consumers and producers will equal the tax revenue raised.

If there are pre-existing taxes, however, there will in general be a deadweight loss even if welfare is measured by first order terms. This is precisely the circumstance of this study for we are considering an increase in property tax rates on top of existing rates. Therefore, each tax proposal considered here carries a positive deadweight loss and furthermore that deadweight loss is different for each of the tax options considered. Therefore, the total burden borne by users and landowners differs for the three tax options even though each option raises the same tax revenues. On comparing the distribution of the tax burden of different options, it must be remembered that the total amount to be compared may also be different.

INCIDENCE ESTIMATES

Factor intensities in each sector were calculated from data on assessed values provided by the D.C. Department of Revenue. Assessed values were assumed to be proportional to earnings of each factor so that, for example, land's share in the earnings of the commercial sector was estimated by dividing the assessed value of land in the commercial sector by the assessed value of all commercial real estate. These factor intensities are: $f_k=0.6159$; $f_l=0.3841$; $g_k=0.6750$; $g_l=0.3250$; $l_x=0.5221$; $l_y=0.4779$.

The elasticity of substitution between land and capital in housing has been estimated at -1.2 by Smith.[3] This estimate will be used for both the residential and commercial sectors.

Most estimates of the price elasticity of the demand for housing are in the neighborhood of -1. Housing in the District is only one part of the metropoli-

[2] Arnold C. Harberger, "Three Basic Postulates for Applied Welfare Economics: An Interpretive Essay," Journal of Economic Literature, vol. 9, 1971, pp. 785–797.

[3] Barton A. Smith, "The Supply of Urban Housing," Quarterly Journal of Economics, vol. 40, 1976, pp. 389–405.

tan housing market, however, so that demand for housing in D.C. would be more elastic than the demand for housing in the whole area. It will be assumed, therefore, that $E_y = -2$. A plausible estimate of the elasticity of demand for commercial real estate in D.C. is much more difficult to arrive at. The incidence of each tax option will therefore be worked out under two different assumptions about the elasticity of demand for commercial real estate. Under the inelastic demand scenario, E_x is assumed to equal -1. Under the elastic demand scenario, E_x is assumed to equal -5.

The results of the incidence calculations are presented below.

INCIDENCE BY FUNCTIONAL CATEGORY

[Thousands of dollars]

	Increase in commercial rate	Uniform increase	Increase in residential rate
Elastic demand:			
Change in real income	+15,064	+13,564	+12,422
Consumers of X	−8,283	−2,509	+1,892
Consumers of Y	+6,206	−3,381	−10,688
Landowners	−12,987	−7,674	−6,624
Change in tax revenue	+10,577	+10,577	+10,577
Excess burden	+4,487	+2,987	+1,845
Inelastic demand:			
Change in real income	+15,064	+16,013	+17,115
Consumers of X	−12,577	−4,097	+4,774
Consumers of Y	+2,276	−5,031	−12,735
Landowners	−4,763	−6,885	−9,156
Change in tax revenue	+13,823	+13,823	+13,823
Excess burden	+1,241	+2,190	+3,287

THE FEDERAL PAYMENT TO THE DISTRICT OF COLUMBIA

(By Michael E. Bell, Office of Domestic Economic Policy Coordination, U.S. Department of Commerce)

I. Introduction

The District of Columbia faces an estimated revenue shortfall of $509 million by 1980. One attractive solution, both fiscally and politically, to this dilemma would be to increase the Federal payment—an annual lump sum transfer of funds from Congress to the District.

Debate over the appropriate level of the Federal payment has existed since the District was designated the Nation's capital in 1790. Some individuals in the District government feel that there is a strong case for significantly increasing the Federal payment, thereby substantially reducing the projected revenue shortfall. It is therefore incumbent on the Tax Revision Commission to comprehensively examine the Federal payment, what it represents, and how it is computed.

No one disputes the fact that the extraordinary Federal presence has a significant impact on the District. The dispute arises when attempts are made to quantify the impact and express it in dollar terms. This report comprehensively examines a number of alternative methods which have been suggested as means of calculating the "cost" to the District of the Federal presence. This investigation highlights the difficulties involved in attempting to isolate the impact of the Federal presence and discusses the difficulties associated with current attempts to quantify these impacts.

II. Historical Overview [1]

In fiscal year 1977, the Federal payment to the District of Columbia was $259,797,400. This level of funding, which was set prior to any supplemental requests and which is 7 percent below the maximum authorized level, represents 26.2 percent of the District's general fund operating appropriations. While still below the 1972 level of 27.1 percent, this level is higher than that realized over the previous four decades.[2] Inevitably, however, there are those who argue that the Federal payment is not sufficient, while others argue just as strongly—and perhaps just as persuasively—that the Federal payment is excessive. The debate has raged since the District was created in 1790. This paper provides a critical examination of the issues involved in the debate and provides a framework for improving the level of discussion of these issues.

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[1] This section relies heavily on "A History of the Fiscal Relations Between the United States and the District of Columbia," by Nelson Rimensnyder and revised by Virginia McMurty, Congressional Research Service, March 25, 1976.

[2] "The Federal Payment, fiscal year 1978", Government of the District of Columbia, September 1976, Table 1.

Clause 17, Section 8. Article I of the U.S. Constitution states that Congress shall have power "* * * to exercise exclusive legislation in all cases whatsoever over such District (not exceeding 10 miles square) as may, by cession of particular states, and the acceptance of Congress, become the seat of government of the United States." This provision of the Constitution establishes a unique relationship between the Federal government and the Nation's capital city. This clause does imply some sort of fiscal responsibility on the part of the Federal government for the District of Columbia. However, the exact form in which that responsibility is satisfied has been the source of much debate since the District was created in 1790. As is the case with other parts of the Constitution, the exact interpretation of this clause has varied over time and with circumstances.

Between 1790 and 1870, there was no formalized fiscal relationship between the Federal government and the local governments which then comprised the District.[3] In fact, in 22 of the first 45 years of the District's development, no Federal payment was made to the various governments. However, as local municipal debt and taxes increased, local governments began to balk at the demands of the Federal government for services and capital improvements. Thus, in 1830, the House Committee on the District of Columbia was directed to investigate the refusal of the local governments to pave portions of Pennsylvania Avenue. On February 10, 1830 the Committee reported to the full House that:

> This (the paving of Pennslyvania Avenue) is deemed necessary, not merely for the convenience of the citizens of the District of Columbia, but for members of Congress, the various and numerous officers of the General government residing in the District, and the citizens of the States, who may have business to transact with Congress and those officers.[4]

In commenting on the general fiscal plight of the local governments, the report continued

> Some of this oppressive state of things will be found in the fact that [the Federal] Government has extensive domains in the City exempt from taxation.[5]

This report by the House Committee on the District of Columbia, while responding to one particular situation, is the first articulation of the Congress' perception of the Federal government's responsibility to the District.[6] According to the report, the Federal responsibility to the District results from the fact that (1) some local government expenditures (especially capital outlays) benefit the Federal government directly and are thus necessary irrespective of the level of local benefit and (2) the extraordinary Federal presence reduces the revenue raising potential of local governments, i.e., the Federal presence causes local governments to forego the collection of certain tax revenues.

This general notion, that there exists some determinate measure of the Federal government's fiscal responsibility to the District, was for-

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[3] As of 1802 there were 5 chartered local units of government which comprised the District of Columbia: the Cities of Georgetown, Alexandria and Washington and the Counties of Washington and Alexandria. In 1846 the city and county of Alexandria were returned to the State of Virginia.

[4] U.S. Congress. House Committee on the District of Columbia, 21st Congress, 1st Session. House Report No. 184, p. 1, Washington, 1830.

[5] Ibid.

[6] It should be emphasized that the Federal government was not making a general commitment to the District, but rather merely acquiesced to pave Pennsylvania Avenue because of the temporary fiscal plight of the local governments.

malized and generalized five years later (1835) when the Senate Committee on the District of Columbia, again responding to political pressure from over-burdened local government officials, concluded that

> * * * it is not easy to comprehend either the principle which would prevent the [Federal] Government from a liberal appropriation of national resources to accomplish the object, or the policy which would confine the City [District of Columbia] to the means possessed by the inhabitants for its improvements.[7]

The Committee report (the "Southard Report") outlined various means of determining the amount of a regular contribution by the Federal government to the District. However, no legislative action was taken.

In 1842, the fiscal responsibility of the Federal government to the District was again refined in yet another report from the House District Committee. Analyzing the financial aspects of establishing and maintaining an efficient police force in the District, the Committee observed that

> The burden of such an establishment ought not to fall exclusively upon the citizens of Washington. Perhaps they should bear a portion of the necessary expenses, should a very large group be provided, with a view to patrol nightly the whole City.[8]

This view is a prelude to recognizing that the Federal government and the District have joint responsibility for providing public services. Also, implicitly introduced in this report, is the notion that the Federal government's fiscal responsibility to the District should be tied to the additional—incremental—cost of providing local services to the Federal government. However, once again no formalized relationship between the Federal government and the local governments which comprised the District emerged.

This haphazard fiscal relationship persisted for nearly 30 more years. Thus, for the first eighty years of the existence of the District of Columbia the fiscal relationship between the Federal government and the District was characterized by extreme uncertainty on the part of the local governments—an uncertainty which exists to this day as a result of the current process of determining the Federal payment. Between 1790 and 1835 (at which time the Southard Report was issued) the Federal government made a total of $1,429,079 in contributions to the operation of the local governments which comprised the District of Columbia. Contributions were made in only 23 of these 45 years and accounted for 25.8 percent of total municipal expenditures over this 45 year period. From 1836 to 1870, the Federal government, again relying on irregular contributions to the operating expenses of the local governments of the District, contributed $12,398,819 to total municipal expenditures—41.2 percent of the total for these years.

The decade of the 1870's was characterized by intensive Congressional debate which was concerned not only with determining the appropriate fiscal relationship between the Federal government and the District, but also with determining the appropriate governmental structure for the District. Also during this period, the Grant administration was encouraging the physical development of the District

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[7] U.S. Congress, Senate Committee on the District of Columbia, 23rd Congress, 2nd Session, Senate Report No. 97, page 12, Washington, 1835.

[8] U.S. Congress, House Committee on the District of Columbia, 27th Congress, 2nd Session, House Report No. 836, p. 2, Washington, 1842.

in an effort "to lift the Nation's capital out of the mud." [9] In 1874, opposing views as to the appropriate method of calculating the Federal payment were articulated in two separate Congressional reports.

In June 1874, the House Committee on the Judiciary (The Poland Report) concluded that

> * * * your Committee are impressed with the belief that the Federal government sustains at least such a relation toward the citizens of the local government as would require it to contribute to municipal expenses an amount bearing the relation to the whole amount required, which the interest of the Federal government here bears to the interest of the local government; and this they believe to be *at least one-half* * * *.[10]

And

> It is believed that it would be much wiser and much more economical * * * to fix upon a definite sum or proportion, to be contributed by both, and that *it is important that these appropriations be made regularly and upon some well informed principle* * * *[11]

Thus, while the Committee expressed its preference for a "50–50" funding arrangement based on total local expenditures, priority was given to regular predictable appropriations being made in accordance with some "well informed principle."

Despite its own report, the Judiciary Committee did not recommend specific legislation. Rather, that task was left to the newly created Joint Select Committee on the Affairs of the Government of the District of Columbia. The Select Committee reported on December 7, 1874 that

> * * * the proportion of expenditures which should be borne by the United States and the citizens and resident property holders, is a proportion not deemed suspectible to exact determination." [12]

The report—the Morill Report—concluded by recommending responsible Congressional control and oversight of the District's budget and proposed an annual Federal contribution to balance the approved budget after the inclusion of locally raised revenues collected through taxes and fees set at rates comparable with those prevailing in other communities.[13] While this recommendation introduced the concept of comparable tax burdens as an important element in calculating the Federal payment it also introduced some complications by referring to the Federal payment as a balancing item.

The result of these reports and the subsequent debate, was the passage of the District of Columbia Organic Act of 1878. This Act not only consolidated the various local governments which comprised the District into a Commission form of government, but it also institutionalized the "50–50" funding arrangement first suggested in the Poland Report. However, the manner in which this funding arrange-

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[9] "A History of the Fiscal Relations Between the United Statess and the District of Columbia", by Nelson Rimensnyder and revised by Virginia McMurty, Congressional Research Service, General Governments Division, March 25, 1976, p. 16.

[10] U.S. Congress, House Committee on the Judiciary, 43rd Congress, 1st Sesssion, House Report No. 627 (The Poland Report) Washington, 1874, p. 10, emphasis added.

[11] Ibid, p. 11, emphasis added.

[12] U.S. Congress Joint Select Committee on the Affairs of the Government of the District of Columbia, 43rd Congress, 2nd Session, Senate Report No. 479 (The Morrill Report) Washington, 1874, p. 3.

[13] Ibid. p. 2–3.

ment was articulated was conceptually different from the Poland recommendation that the Federal government, through the Federal payment, pay half of the District's expenditures. Instead, under the Organic Act, the Federal government was to match, dollar for dollar, locally raised revenues derived from municipal taxes. The distinction between tax revenues and total expenditures may have been slight in 1878, but is of much more significance today because of the increased reliance of local governments on categorical and block grant programs which—including revenue sharing funds—amounted to approximately 24.4 percent of total operating funds of the District in fiscal year 1976.

In the 98 years since the passage of the Organic Act, Congress has explicitly addressed the issue of determining a "fair and equitable" Federal payment seven times—the last time being in 1976. This most recent effort—a bill introduced by representative Gilbert Gude (R-Md) to create a Commission to study the adequacy of the Federal payment—failed to reach the floor of the House in the Second Session of the 94th Congress. Three of these seven reports—the Bureau of Efficiency Report of 1929, the Jacobs Report of 1937 and the Senate Appropriations Subcommittee Report of 1946—recommended the establishment of a formula for computing the Federal payment. As might be anticipated, the difference between the reports hinged on the determination of the appropriate formula.

The Bureau of Efficiency Report identified two items of importance in determining the Federal payment:[14] (1) the Federal government tax liability as a municipal taxpayer in connection with the ordinary costs of the local government and (2) its liability on account of its extraordinary presence. That is, it combined the arguments of taxes foregone and net cost.

However, the Jacobs report emphasized a political justification for the payment—*viz* the lack of District "home rule":

> Until the District residents have a direct and formal part in determining the character and extent of local services and expenditures, they should not be expected to bear costs in excess of those borne normally by the residents of other comparable communities for similar services.[15]

Thus, as was the case with the Morrill Report, the Jacobs Report argued that local tax burdens should be comparable to those in cities of similar sizes and with similar service responsibilities and the Federal payment should make up any deficiencies. Neither of these reports, however, led to any Congressional action. The result was merely to intensify debate as to which of the various formulas is the most appropriate for calculating the Federal payment. However, the Revenue Act of 1939 officially replaced the "40–60" funding arrangement which was established in 1921 with a lump sum transfer payment which had existed in form since 1925 and which is still in existence today.

This brief historical overview documents the changing Congressional attitude toward the District, what the Federal payment represents and how it should be computed. The range of alternatives extends from the narrow cost of services approach of the early and mid 19th century, through the fixed percentage formula to the comparable tax burden

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[14] U.S. Congress, Committees on Appropriation of the Senate and the House, 70th Congress, 2nd Session, House Document No. 506, p. 5, 1929.

[15] U.S. Advisory Committee on Fiscal Relations Study, 75th Congress, 1st Session, 1937 Senate Document No. 203, p. 11–12.

approach of the early 20th century. A common thread which links these diverse approaches is the belief that the extraordinary Federal presence inflicts significant costs on the District and that the Federal government is somehow accountable. From this historical background, at least five alternative methods of computing the federal payment can be identified:

(1) Cost of services approach.
(2) In lieu of taxes approach.
(3) Net cost of Federal presence.
(4) The fixed percentage formula financing scheme.
(5) The comparable tax burden approach.

These approaches are defined and critically discussed in the next section. Each of these approaches represents an attempt to empirically quantify the appropriate level of the Federal payment based upon theoretical perceptions of the "proper" fiscal relation between the District and the Federal government. The reality, however, is that the Federal payment is currently perceived by Congressional policy makers as an amount which fills the gap between what Congress authorizes the District to spend and the amount of revenue the District raises. That is, the Federal payment is treated as if it were merely a residual amount included in the District's budget for the purpose of insuring the budget will be balanced. In fact, as implied by this view, in eleven of the last 15 years the direction of change in the annual growth rate of the Federal payment has been opposite that of the District's contribution to total expenditures. (See Diagram I). That is, typically when the rate of growth in the District's revenues increases (decreases) the rate of growth in the Federal payment decreases (increases). Therefore, the value of basing an entire analysis of the Federal payment on the naive assumption that there does, in fact, exist some consensus as to what constitutes an objective formula for determining the "proper" level of the Federal payment is of questionable merit. In this context, the 1972 Report of the Commission on the Organization of the Government of the District of Columbia [16] represents a break with the 20th Century tradition of debating alternative formulas, by concluding that there is no objective mathematically precise formula for computing the Federal payment and that the important issue is that of predictability. Similarly, this report does not address the issue of developing a specific formula for calculating the Federal payment, but rather critically examines the alternative approaches thereby exposing their fundamental conceptual differences and operational weaknesses.

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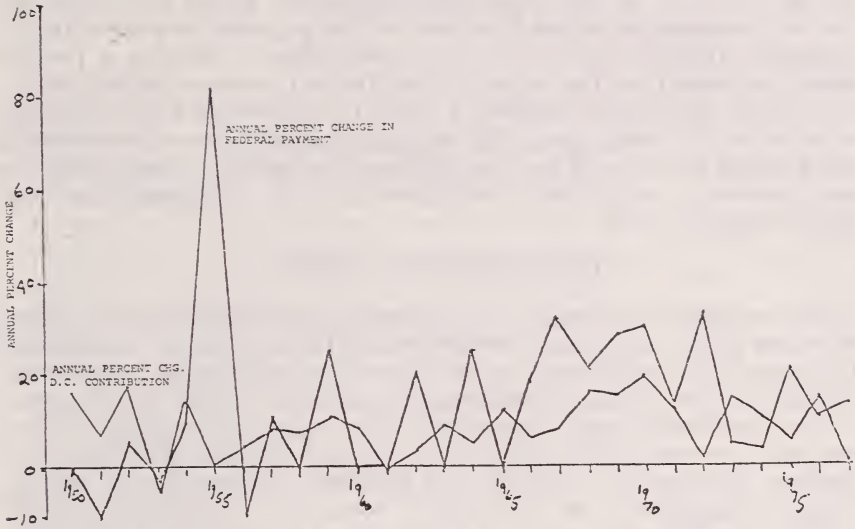
[16] The Report of the Commission on the Organization of the Government of the District of Columbia, Volume III, House Document No. 92–317, August 17, 1972, p. 238.



Source: Staff compilations.

DIAGRAM I.—Annual percentage change in Federal payment to the District and the District's contribution to total expenditures, 1950–77

III. ALTERNATIVE APPROACHES FOR ESTIMATING THE FEDERAL PAYMENT

Representative Gude recently introduced a bill which would have established a Commission to study the adequacy of the Federal payment to the District of Columbia. In presenting that legislation Mr. Gude asserted that

> No one can seriously question the validity of providing the District of Columbia with an annual Federal payment. The real questions are: What should be the level of that Federal payment and how should it be determined.[17]

Unfortunately, the answer to the second question greatly influences the answer to the first. That is, by designating a particular methodological approach as being "the" appropriate approach for computing the amount of the payment one would essentially be determining the level of appropriations. This approach to the question of the adequacy of the Federal payment ignores the recent realization that the determination of the payment is not easily subject to precise formulation and is reminiscent of the debate during the 1930's. Posed in this manner, however, the question is basically a political one of choosing between competing approaches for estimating the level of the payment.

Over half a dozen methodological approaches—of varying degrees of sophistication—are currently being presented as means of computing the Federal payment. The results of these different approaches

[17] Statement by Representative Gude Hearings and Markups Before the Subcommittee on Government Operations and the Committee on the District of Columbia, House of Representatives, 94th Congress, 2nd Session, Serial No. 94–16, page 2.

are as disparate as the approaches themselves. Given the nature of the environment in which the level of the payment is currently determined, the potential benefits of attempting to develop a precise objective measure of the impact of the Federal presence are uncertain. Therefore, this section presents a critical examination and evaluation of some of the most frequently suggested approaches of calculating the Federal payment. The scope of these alternatives ranges from the very narrow, a cost of services approach, to the very general, a fixed percentage approach.

COST OF SERVICES APPROACH

The narrowest prescription for determining the level of the Federal payment is the cost of services approach. In its strictest formulation this approach would require the Federal government to compensate the District for costs of all services it consumed directly, e.g., fire protection and sanitation. Accordingly this approach requires one to estimate the costs to the District of services supplied directly to the Federal government. Though this approach is conceptually attractive, it assumes that one can identify where the Federal government bentfits from locally provided services and that a dollar value can then be placed on that benefit. This would require an accounting system of such sophistication that the city would essentially have the capability of financing local expenditures solely through user charges.

Title V of the District of Columbia Self-Government and Governmental Reorganization Act of 1973 (P.L. 93–198) outlines a number of items the Mayor must consider in formulating his annual request for the Federal payment. Subsection (b) of Section 501 specifically requires that he annually consider "Recurring and non-recurring costs of unreimbursed services to the Federal Government." These costs are enumerated and estimated for fiscal year 1978 in Table I.

The data contained in Table I is not exhaustive. As noted above, city agencies provide services to the Federal government where specific workload and cost data are not easily identifiable or quantifiable, e.g., detention of people involved in political demonstrations, materials provided to Federal agencies for the D.C. public library, office space and support staff for employees of the General Accounting Office, etc. One reason that this data is not obtainable, and for that matter a major deficiency of the cost of services approach generally, is that the Federal government is so dominant in the District that it is often virtually impossible to distinguish between those costs directly attributable to providing services to the Federal government and those costs incurred in providing services exclusively to District residents or non-Federal employees.

In addition to this limitation, there are three conceptual problems inherent in this approach which must be addressed. First, the data included in the cost of services approach should represent only incremental, or marginal costs incurred by the District as a result of providing services to the Federal government. That is, the Federal government should only compensate the District for costs incurred above and beyond the total costs of providing the services to District residents and non-Federal employees.

TABLE I.—UNREIMBURSED SERVICES PROVIDED BY DISTRICT OF COLUMBIA GOVERNMENT TO THE FEDERAL GOVERNMENT

Agency: Service	Estimated cost (fiscal years) 1975	1976
Office of Public Affairs:		
Answering requests for information related to the District's role as the Nation's Capital	$10, 150	$15, 200
Preparing materials for Mayor to use in ceremonial functions related to District's role as national capital	300	400
Office of Budget and Management Systems:		
Staff support to the General Accounting Office in the conduct of agency audits and reviews	1, 115	1, 179
Administration of the Police and Fire Retirement System for the Executive Protective Service, Park Police and Secret Service	12, 841	13, 482
Staff support and office for General Accounting Office staff reviewing District's financial management systems	23, 671	30, 830
Transportation for Federal officials to sites of city capital improvements projects	420	568
Office of Consumer Affairs: Testimony before Federal regulatory agencies		1, 194
Department of General Services:		
Administration of several contracts that include requirements for U.S. Park Service and a number of other Federal agencies	2, 550	2, 550
Assignment of Urban Planner to the National Capital Planning Commission Recreation Subcommittee	1, 890	2, 290
Provision of project manager coordinator on projects for the U.S. Attorney's Office and General Services Administration	1, 921	2, 015
Provision of rent-free space for the General Accounting Office, U.S. Marshal's Office, and U.S. Attorney's Office in various District facilities	215, 882	331, 771
Metropolitan Police Department:		
Rush hour traffic control	294, 224	405, 179
Police protection Federal enclave	1, 461, 561	1, 556, 970
Crowd control during demonstrations	225, 671	115, 183
Police protection to President and his family	33, 735	10, 768
Police protection to visiting dignitaries	15, 761	11, 659
Department of Corrections:		
Cost of lunches provided to the Federal District Court for defendants and detainees in the court holding facility	23, 400	24, 440
Services of Supervisory Steward for lunch program (1 hr per day)	1, 765	1, 765
Department of Transportation:		
Telephone costs for switching and local service for General Accounting Office staff assigned to District	2, 580	3, 093
Issuance of motor vehicle license plates to U.S. Government and members of Diplomatic Corps	5, 000	5, 000
Issuance of District motor vehicle operator's licenses to members of Diplomatic Corps	27, 000	27, 000
Energy and maintenance charges for traffic signals on federally owned right-of-way	35, 000	37, 000
Department of Environmental Services:		
Provision of solid-waste collection services in the form of litter control for national events such as parades and demonstrations	31, 300	31, 300
Total, all district agencies	2, 427, 737	2, 630, 936

Source: Reprint of table 4 in "The Federal Payment, Fiscal Year 1978," Government of the District of Columbia, Mayor's Office, September 1976.

The first problem encountered in estimating the additional costs of supplying goods to the Federal government stems from the economic nature of public goods. Specifically, "pure" public goods are consumed "collectively" or "jointly," i.e. the benefits are indivisible among two or more persons. To the extent that goods and services supplied by the District exhibit this "publicness" it would not be conceptually possible to distinguish those benefits which accrue to District residents and non-federal employees from those which accrue directly or indirectly to the Federal government. Examples include, but are not limited to, expenditures on public health, road maintenance, public safety and traffic control.

Aside from this conceptual problem of distinguishing which benefits accrue to the Federal government, there is the problem of estimating the additional costs of supplying goods to the Federal government. Depending on the degree of capacity utilization the additional cost of extending the service to the Federal government may include some fixed costs in addition to the increases in variable costs. Again,

because of the complex relationship between the Federal government and the economy of the District it is extremely difficult to isolate and quantify these "marginal" costs. For example, three quarters of the total estimated cost of unreimbursed services provided by the District in FY 1976 are accounted for by rush hour traffic control ($405,179) and police protection to the Federal enclave ($1,556,970). From Table I it is not altogether clear whether these figures represent incremental costs or total costs. In any event, it is clear that these costs would not be totally eliminated if the Federal government was not so dominant in the District.

A second conceptual problem, related to the first, is how to evaluate the cost of services provided directly to the Federal government. The true marginal—change in total—cost should by definition be the difference between total expenditures on a particular service when it is extended to the Federal government and when the Federal share is excluded from the amount supplied. It should not be the average cost multiplied by the level of service provided to the Federal government for two reasons. First, average cost data include fixed costs which are spread evenly over all units produced. If the additional output going to the Federal government does not require additional capacity the change in total cost is not related to the existing fixed costs but rather is limited to increases in variable costs. On the other hand, if the additional output for the Federal government requires additional capacity, the total cost of such additional capacity should be included and not spread over all previously produced units. Second, as the quantity of a certain public good supplied increases (with the addition of the services supplied to the Federal government) the average cost of production may fall, rise or remain unchanged depending on the cost conditions associated with the current level of production. For example, if the average cost of production falls as a result of the increased service levels produced to satisfy the additional Federal requirements (net economies of scale are said to exist in the production of this good) then using average costs to estimate the Federal liability will *over* estimate the "true" incremental costs. If, on the other hand, average costs rise with the expansion of output to meet the Federal requirement (net diseconomies of scale), using average costs will *under* estimate the "true" incremental costs.

A third conceptual problem arises in defining which costs are associated with services directly related to the Federal presence. In other words, what determines the boundary between services supplied directly and indirectly to the Federal government or services which wholly result from the extraordinary degree of the Federal presence—e.g. included costs. For example, it is reasonable to argue that the unfunded pension liabilities of the District's pension system for police, firemen and teachers should be compensated for by the Federal government since the size of the liability is a direct result of past Congressional action. The current unfunded liability is estimated to be $1.6 billion and this year's required contribution is approximately $65 million.

A final—and important—criticism of this approach is that it provides an inherently myopic view of the fiscal impact of the Federal presence since it ignores such crucial factors as the District's tax

revenue foregone because of the Federal presence and the local spending which is a result of Congressional mandating (requiring certain service levels or service quality without providing funding). In summary, current methods inherent in the "cost of services" approach are so conceptually narrow and operationally unworkable as to preclude its use as a practical guideline for determining the fiscal impact of the Federal presence on the District.

IN LIEU OF TAXES APPROACH

The in lieu of taxes approach of calculating the Federal payment treats Federal property as if it were privately owned and therefore capable of generating tax revenues. The method is to compute the (hypothetical) tax liability which would be paid to the District were the property not exempt from local taxation. Title V, subsection (b) of the District of Columbia Home Rule Act (Public Law 93–198; 1973) requires the Mayor, when considering his annual request for the Federal payment, to evaluate:

(1) Revenues unobtainable because of the relative lack of taxable commercial and industrial property because of the Federal presence;

(2) Revenues unobtainable because of the relative lack of taxable business income because of the extraordinary Federal presence;

(3) Potential revenues that would be realized if Federal government exemptions from District taxes were eliminated, e.g., income of presidential appointees, gate receipts at museums, the 1942 Act.

In the narrowest interpretation of the in lieu of taxes approach only items 1 and 2 above should be considered in computing the Federal payment because they represent actual taxes foregone by the District. Item 3 relates to the cost to the District of the Federal presence in the sense that Congressional action limits the bases of various District taxes, e.g., excluding non-resident and presidential appointees from liability under the income tax and Congressional mandates for exempting particular property from the District's property tax. Estimates of the tax revenue foregone by the District because of the Federal presence are presented in Table II.

TABLE II.—ESTIMATED NEGATIVE IMPACT OF THE PRESENCE OF THE FEDERAL GOVERNMENT ON THE DISTRICT OF COLUMBIA TAX REVENUE

[Dollar amounts in millions]

	Amount
I. Revenues lost because of Federal mandated exemption from District taxes:	
A. Federal real estate 1977	$126.5
B. Other exemptions, 1977 (foreign governments and special acts of Congress)	6.7
C. Federal personal property (estimated) 1977	31.0
Subtotal	164.2
II. Revenues lost because of congressional restraints on District of Columbia taxing authority:	
A. Nonresident individual income tax, 1977	224.4
B. Exemption of congressional employees and Presidential appointees	3.2
Subtotal	227.6
III. Revenues lost because of diplomatic exemptions:	
A. All nonproperty tax revenue lost	8.8
IV. Revenues lost because of Federal restrictions on the taxation of military	19.0
Estimated total impact of Federal presence	419.6

Source: Reprint of table 5 in "The Federal Payment, fiscal year 1978," Government of the District of Columbia, Mayor's Office, September 1976.

Part I of Table II—Revenues Lost Because of Federally Mandated Exemptions From District Taxes—represents estimates of property taxes which would have accrued to the District in fiscal year 1977 if Federal property were subject to taxation. The estimated figure of $164.2 million—which is 39.1 percent of the estimated total negative impact of the Federal presence on the District's tax revenue—is well below the authorized ceiling of the Federal payment for fiscal year 1978 of $280 million. Thus, this perception of the in lieu of taxes approach would not justify current funding levels of the Federal payment. While this approach may be conceptually satisfying, there are a number of limitations with this most restrictive interpretation of the in lieu of taxes approach.

Since the District is the Nation's capital, there is a significant Federal presence which has an obvious direct impact on the District's tax base. In fiscal year 1977, 39.1 percent of total assessed value in the District was owned by the Federal government and thereby exempt from the District's property tax. However, there is an additional 4.7 percent of total assessed value which was owned by the District and therefore also exempt from taxation, while 9.6 percent of the total was owned by organizations which the District and the Congress have provided with a partial or total property tax exemption. Thus, all together 53.5 percent of the District's real property value was exempt from property taxation with 73 percent of the exempt property being Federally owned. Other cities also have significant amounts of tax exempt property.

For example, in 1972 Boston had 56.0 percent of its assessed property value exempt from property taxation; Albany, New York had 46.5 percent of its real property value exempt from the property tax; Buffalo and New York City each had over one third of their total real property value exempt from taxation in 1969; Baltimore (1968), Minneapolis (1962), Pittsburgh (1967) and St. Louis (1968) all had over 23 percent of their real property value exempt from taxation.[18] In each of these cases—as is true in the District—the local government does not have exclusive control over the decision making process which directly affects their tax base. Other levels of government—State or, in the case of the District, Congress—annually increase the types—and therefore total assessed value—of property which are eligible for partial or total property tax exemptions. Therefore, it is somewhat simplistic to assume—implicitly as is currently done under the in lieu approach—when computing the property tax revenue foregone by the District that all exempt property would be replaced by taxable property of equal value. While the District may have an inordinate amount of its real property value exempt from taxation, the tax rolls of other major local jurisdiction are not completely void of Federal and State mandated tax exempt properties. Thus, by assuming that all tax exempt property would be taxed when computing District revenue lost because of the Federal presence, the result is an inflated tax base and an inflated estimate of foregone revenue.

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[18] Balk, Alfred, "The Free List: Properties Without Taxes," Russell Sage Foundation, 1971 and for Boston data see Hellman and Sifniotis, "Distributional Considerations of Property Tax Exemption: An Analytical Framework," Public Finance Quarterly, January 1977.

A second bias which also has the effect of artificially inflating the base which is used to compute property tax revenues foregone, is the methodological approach used by assessors in valuing Federally owned tax exempt property in the District.[19] Generally, for valuing special purpose property, such as Federally owned tax exempt property, a "cost" approach of valuation is used—that is, the cost of replacing the structure and other improvements is estimated and then depreciated for economic, functional and physical obsolescence. To this value is added the estimated land value which is obtained by investigating comparable vacant land sales. The implicit assumption of the first component of the estimate is that someone else would build the same type of structure with all the security precautions that the Federal government does. This problem could be handled through adjustments for functional obsolescence—depreciation of the value of the structure because it no longer serves the necessary needs. The more difficult problem is associated with valuing land.

By using "comparable" vacant land sales the implicit assumption is that the Federal land, if not in Federal use, would be zoned in the same manner as surrounding land. More important, however, is the additional implicit assumption that supply and demand conditions—when the tax exempt property is included in the supply of land—would result in the same market clearing price of land as when 54.8 percent of the land area is held off of the market. That is, even if Federally owned land was zoned as surrounding property, it is too simplistic to assume that when the supply of land is more than doubled demand conditions will be sufficient to result in the same market clearing price as realized when over half the land is held off of the market thereby artificially restricting supply. In fact, a case could be made that the land in the District may have high value because of the Federal presence and the resulting restriction on the amount of land supplied.

In addition to this problem of adequately determining the base[20] which is to be used in estimating property tax revenues foregone, there is also the question of determining the appropriate rate which is to be applied to the base. The estimates in Table II simply apply the current rate—$1.83 per $100 assessed value—to the inflated base. This implies that the District would not lower the burden on other property owners when the property tax base doubled, but would rather opt to double the property tax collection. This assumption may or may not be reasonable. The effective property tax rate in the District is *not* inordinately excessive relative to other jurisdictions in the metropolitan area. Therefore, pressures for property tax relief may not be too great. However, the District has made a commitment to a balanced revenue system and property tax relief for low income families. If the District faced a potential doubling of their property tax revenues it must be reasonable to assume that the District would act to reduce property tax burdens on the low income family and

[19] It should be cautioned here that it is easy to criticize existing methods, but more difficult to develop and present concrete alternatives. The Department of Finance and Revenues is required by law to estimate the "true" value of the tax exempt property.

[20] Assume that the assessed value of Federally owned property represents 100 percent of market value as required by the real property Tax Revision Act of 1974.

maintain the same relative importance of the property tax as a source of revenue—that is, the property tax rate might be significantly lowered if the property tax base more than doubled.

To counter the argument that the estimates of the property tax revenue lost are too high, there is the concern that the in lieu of tax approach neglects—does not give appropriate weight to—secondary impacts of the Federal presence. That is, Table II does not include estimates of tax revenues which would be generated if the Federal government were replaced by commercial or industrial enterprises thereby increasing the bases of the corporate income tax and other District taxes which fall primarily on the business community. Specifically, the estimates in Table II do not purport to include added revenues from business taxes, bank taxes, insurance taxes and sales and use taxes which would be generated if the Federal installations were replaced by commercial enterprises. The uncertainties associated with predicting the commercial and industrial mix which would have evolved in the District in the absence of the Federal presence would render such estimates meaningless. Thus, in its narrowest interpretation, this approach only looks at an identifiable and manageable subset of all taxes lost because of the Federal presence.

A broader interpretation of this in lieu of taxes approach is possible (Table II, parts I through IV) and seems to be the one embraced by District officials. In this broader context, the tax revenue foregone by the District because of the Federal presence is comprised of two segments: (1) taxes lost because of the Federal presence as discussed above plus (2) revenue lost because of Federally imposed limitations on potential tax sources or current tax bases. The first was discussed above under the narrow interpretation of this approach and portrays the Federal government in a relatively passive role. The second component results from the government's active role in taking explicit steps to limit the bases of various District taxes. The most obvious example is the Congressional prohibition of the efforts on the part of the District to tax income generated in the District by non-residents. This results in an estimated revenue loss of $224.4 million in fiscal year 1977 and represents almost 90 percent of such lost revenue as included under Sections II, III and IV [21] of Table II. This $224.4 million figure is net of any taxes that Maryland and Virginia would assess against District residents working in those jurisdictions. Also netted out are revenues lost because of the repeal of the unincorporated business ("professionals") tax which would go into effect simultaneously with the enactment of a non-resident income tax. This estimate is also based on the assumption that the income of non-residents would be taxed at the full applicable rate. Proposed Congressional legislation would tax non-residents at a third to a half of the applicable rate.

The primary difference between the narrow (Table II, part I) and broad (Table II, parts I–IV) interpretation of the in lieu approach is the perception of the Federal responsibility toward the District. The narrow view is limited to estimates of actual taxes foregone because of the physical presence of the Federal government. The premise is that the Federal government should compensate communities for taxes lost

[21] As a result of the Tax Reform Act of 1976 the $19.0 million included under Section IV no longer belongs in this table.

because of real property removed or excluded from the tax rolls because of Federal ownership. In keeping with this perceived responsibility the Federal government authorized $793.0 million in fiscal year 1977 for school assistance to Federally affected areas—impact aid to education. On another front, Congress just passed the Payment in Lieu of Taxes Act of 1976 (P.L. 94–565).

Recognizing the impact on local governments of the extraordinary Federal presence inherent in our national forest system,[22] this Act requires a total Federal transfer of roughly $350 million to state and local governments.

The broader view encompasses not only actual taxes lost because of the physical presence of the Federal government, but also taxes not collected because of active Congressional action which inhibits the full exploitation of revenue sources by the District. Neither approach addresses the issue of the net cost of the Federal presence and neither approach treats the District-Federal relationship as being in any sense different or more unique than the relationship between the Federal government and any other subnational jurisdiction in which the Federal presence is significant.

Also, it should be recognized that while the Federal presence does generate certain costs for the District—taxes foregone or services consumed—there are benefits which accrue to the District as a result of the Federal presence. Therefore, it is frequently argued that the Federal payment should be tied to the net tax cost of the Federal presence.[23] The attempt to calculate the net cost of the Federal presence, item by item, inevitably meets with two major problems. The first problem is to determine conceptually what are the costs and benefits of the Federal presence. The second problem is to quantify the costs and benefits in dollar terms.[24]

Not much effort has been made to try and identify and quantify some of the benefits to the District of the Federal presence. One positive aspect of the Federal presence—vis-a-vis the District—is its impact on the employment base. First of all, the District's economic base is relatively stable because of the large Federal presence. Therefore, the amplitude of the economic fluctuations is smaller in the District than is observed nationally or in other metropolitan areas where the Federal presence does not provide this type of insulation. Additionally, based on empirical evidence, an employment multiplier of Federal employment has been estimated to be 2.1.[25] That is, for each Federal employee added to the District's labor force private sector employment expands by 2.1 persons. This is a higher multiplier than one might expect for the commercial sector where spending leakages would be greater. Thus, if Federal employment in the Washington area was replaced, employee for employee, by commercial employment, total metropolitan employment might decrease by as much as 350,000. In addition to affecting the number of people employed, replacing Federal employees by their

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[22] Five Western States actually have over 50.0 percent of their land area owned by the Federal government—Alaska (96.4 percent), Idaho (63.7 percent), Nevada (86.5 percent), Oregon (52.3 percent) and Utah (66.2 percent).

[23] Op cit. Report of the Commission on the Organization of the Government of the District of Columbia, Volume III, p. 233.

[24] Ibid.

[25] "Annual Planning Report, District of Columbia Fiscal Year 1977," D.C. Department of Labor, June, 1976.

commercial counterparts would result in an economic base which is less insulated from—more sensitive to—national economic fluctuations. It is impossible to quantify these benefits to the District and reduce them to the least common denominator—the dollar. However, that does not reduce the significance of these benefits when discussing the net cost of the Federal presence.

Theoretically, the in lieu of taxes (net cost) approach takes a more comprehensive view of the effects of the Federal presence than the cost of services approach discussed above. The implementation of this approach, however, which requires the identification and quantification of the costs and/or benefits, is no easier.

COMPARABLE TAX BURDEN APPROACH

The basic premise of the comparable tax burden approach is that, because of the extraordinary Federal presence, the residents of the District should not be required to bear tax burdens in excess of the average burdens they would expect in comparable cities providing comparable services. The comparability aspect has two dimensions: (1) comparability of the District with other cities of similar size, composition and public service responsibilities—the approach which Congress views as most important—and (2) comparability with other local jurisdictions in the metropolitan area which compete with the District for residents and businesses. The District of Columbia Home Rule Act (Public Law 93–198; 1973) again requires the Mayor to evaluate both dimensions of the comparability issue when determining his annual request for the Federal payment.

The Department of Finance and Revenue annually publishes a comparison between hypothetical tax burdens for a family of four living in the District and the Nation's 30 largest cities. The results for different income classes are reproduced in Table III. For a family of four living in the District with an annual income of $5000 or $10,000 the total tax burden is below the 30 city average. For a similar family with an annual income of $15,000 the District's tax burden closely approximates the 30 city average. However. for a family of four with an income of $20, $30 or $40,000 the District's tax burden exceeds the 30 city average by 4.2, 11.9 and 16.7 percent, respectively. Therefore, the implication is that if the District were to align its tax burdens with the average of the 30 largest cities it would forego collecting substantial revenue from the high income classes while collecting more revenue from lower income groups. Any net loss in revenue would have to be compensated for by a higher Federal payment.

TABLE III.—ESTIMATED BURDEN OF MAJOR TAXES FOR A FAMILY OF 4

[By city, by income class, 1974]

City	$5,000							$10,000						
	Taxes				Burden			Taxes				Burden		
	Income	Sales	Auto	Real estate	Amount [1]	Percent	Rank	Income	Sales	Auto	Real estate	Amount [1]	Percent	Rank
Boston	−24	20	52	992	1,040	20.8	1	281	34	124	1,527	1,965	19.7	1
New York City	19	169	68	398	654	13.1	3	288	261	106	613	1,267	12.7	3
Milwaukee	−159	80	53	480	453	9.1	13	365	131	76	738	,,309	13.1	2
Buffalo	0	158	53	446	657	13.1	2	206	243	91	685	1,225	12.3	4
Los Angeles	0	103	62	389	553	11.1	5	64	164	102	731	1,061	10.6	7
Baltimore	42	74	65	299	480	9.6	10	380	118	94	460	1,051	10.5	8
San Francisco	0	112	62	239	413	8.3	23	64	179	102	488	833	8.3	14
Detroit	−66	128	58	305	425	8.5	19	83	183	94	470	829	8.3	15
Chicago	25	144	76	409	654	13.1	4	150	208	127	630	1,114	11.1	5
Philadelphia	166	50	56	233	504	10.1	7	531	90	82	358	1,062	10.6	6
Washington, D.C.	27	116	74	210	427	8.5	18	250	180	99	323	853	8.5	13
San Diego	0	103	62	214	378	7.6	27	64	164	102	422	752	7.5	19
Denver	7	182	49	231	469	9.4	12	152	262	94	356	864	8.6	11
Atlanta	0	128	59	198	386	7.7	26	83	191	106	365	745	7.5	20
St. Louis	55	141	61	215	472	9.4	11	202	206	120	331	859	8.6	12
Indianapolis	50	83	64	340	537	10.7	6	150	133	120	523	926	9.3	9
Pittsburgh	50	50	56	293	449	9.0	14	300	90	82	451	924	9.2	10
Kansas City	55	110	66	184	415	8.3	22	202	160	132	283	777	7.8	17
Phoenix	26	141	54	189	411	8.2	24	144	201	106	291	743	7.4	21
Cincinnati	115	69	51	181	416	8.3	21	255	115	73	279	722	7.2	23
Cleveland	65	69	51	248	433	8.7	17	155	115	73	382	725	7.2	22
San Antonio	NA	89	59	347	496	9.9	9	NA	141	102	534	778	7.8	16
Columbus	90	61	51	157	359	7.2	28	205	102	73	241	622	6.2	28
New Orleans	0	134	43	162	339	6.8	29	45	210	69	337	661	6.6	25
Seattle	NA	162	71	270	502	10.0	8	NA	235	118	415	768	7.7	18
Dallas	NA	89	50	306	444	8.9	15	NA	141	81	471	693	6.9	24
Memphis	NA	153	74	208	435	8.7	16	NA	227	99	320	647	6.5	26
Houston	NA	89	55	245	389	7.8	25	NA	141	92	377	610	6.1	29
Nashville	NA	153	74	195	422	8.4	20	NA	227	99	300	627	6.3	27
Jacksonville	NA	72	54	65	190	3.8	30	NA	116	87	152	354	3.5	30
30-city average	18	108	59	288	473	9.5		154	166	98	462	879	8.8	

See footnote at end of table.

TABLE III.—ESTIMATED BURDEN OF MAJOR TAXES FOR A FAMILY OF 4—Continued

[By city, by income class, 1974]

City	$10,000							$20,000						
	Taxes				Burden			Taxes				Burden		
	Income	Sales	Auto	Real estate	Amount [1]	Percent	Rank	Income	Sales	Auto	Real estate	Amount [1]	Percent	Rank
Boston	521	47	157	2,175	2,901	19.3	1	771	58	184	2,748	3,761	18.8	1
New York City	611	339	154	873	1,977	13.2	3	1,046	405	154	1,103	2,707	13.5	3
Milwaukee	764	176	111	1,051	2,102	14.0	2	1,243	212	111	1,328	2,894	14.5	2
Buffalo	461	317	124	977	1,877	12.5	4	806	378	124	1,234	2,542	12.7	4
Los Angeles	234	217	146	1,146	1,743	11.6	5	454	260	160	1,512	2,386	11.9	5
Baltimore	626	155	136	656	1,573	10.5	7	945	187	140	828	2,099	10.5	6
San Francisco	234	237	146	790	1,407	9.4	10	454	284	160	1,057	1,954	9.8	10
Detroit	462	229	129	669	1,490	9.9	9	776	265	129	845	2,015	10.1	8
Chicago	275	260	183	897	1,616	10.8	6	400	301	183	1,134	2,018	10.1	7
Philadelphia	797	130	117	511	1,555	10.4	8	1,063	163	117	645	1,988	9.9	9
Washington, D.C	493	235	153	461	1,341	8.9	11	810	282	153	582	1,827	9.1	11
San Diego	234	217	146	674	1,271	8.5	15	454	260	160	897	1,771	8.9	12
Denver	311	326	126	607	1,270	8.5	16	551	379	132	640	1,703	8.5	14
Atlanta	258	241	147	568	1,214	8.1	17	496	283	162	747	1,687	8.4	16
St. Louis	398	260	163	472	1,293	8.6	14	637	301	175	596	1,710	8.6	13
Indianapolis	250	175	164	745	1,335	8.9	13	350	211	179	942	1,682	8.4	17
Pittsburgh	450	130	117	643	1,340	8.9	12	600	163	117	812	1,693	8.5	15
Kansas City	398	202	181	403	1,184	7.9	18	637	234	197	509	1,578	7.9	18
Phoenix	269	249	142	415	1,076	7.2	22	473	288	158	525	1,444	7.2	20
Cincinnati	435	155	107	398	1,095	7.3	20	650	189	107	502	1,449	7.2	19
Cleveland	285	155	107	544	1,091	7.3	21	450	189	107	687	1,433	7.2	21
San Antonio	NA	185	149	767	1,100	7.3	19	NA	222	168	972	1,362	6.9	22
Columbus	360	138	107	343	948	6.3	26	550	168	107	434	1,259	6.3	25
New Orleans	104	275	92	550	1,021	6.8	24	169	328	92	738	1,327	6.6	23
Seattle	NA	294	166	591	1,051	7.0	23	NA	346	179	747	1,272	6.4	24
Dallas	NA	185	118	674	977	6.5	25	NA	222	129	853	1,203	6.0	26
Memphis	NA	289	153	457	898	6.0	27	NA	340	153	577	1,069	5.3	27
Houston	NA	185	135	538	858	5.7	29	NA	222	150	681	1,033	5.3	28
Nashville	NA	289	153	428	869	5.8	28	NA	340	153	540	1,033	5.2	29
Jacksonville	NA	155	120	257	532	3.5	30	NA	187	120	350	657	3.3	30
30-city average	308	215	138	673	1,333	8.9	----------	493	256	145	859	1,753	8.8	----------

See footnote at end of table.

	$30,000							$40,000						
	Taxes				Burden			Taxes				Burden		
	Income	Sales	Auto	Real estate	Amount [1]	Percent	Rank	Income	Sales	Auto	Real estate	Amount [1]	Percent	Rank
Boston	1,271	70	295	3,664	5,300	17.7	1	1,771	81	390	4,580	6,822	17.1	1
New York City	2,229	485	201	1,470	4,385	14.6	2	3,749	564	203	1,838	6,354	15.9	2
Milwaukee	2,098	254	132	1,770	4,254	14.2	3	3,181	295	132	2,213	5,822	14.6	3
Buffalo	1,767	453	171	1,645	4,036	13.5	4	3,020	527	173	2,056	5,775	14.4	4
Los Angeles	1,069	311	213	2,098	3,690	12.3	5	1,924	362	235	2,683	5,205	13.0	5
Baltimore	1,583	223	173	1,104	3,083	10.3	7	2,220	260	173	1,380	4,033	10.1	8
San Francisco	1,069	339	213	1,484	3,105	10.4	6	1,924	395	235	1,910	4,464	11.2	6
Detroit	1,397	317	168	1,127	3,009	10.0	8	2,018	369	169	1,409	3,965	9.9	9
Chicago	650	360	248	1,511	2,769	9.2	12	900	419	248	1,889	3,456	8.6	13
Philadelphia	1,594	195	142	860	2,791	9.3	11	2,125	227	142	1,075	3,569	8.9	11
Washington, D.C	1,545	355	196	776	2,873	9.6	9	2,370	428	196	970	3,965	9.9	10
San Diego	1,069	311	213	1,253	2,846	9.5	10	1,924	362	235	1,609	4,130	10.3	7
Denver	1,038	454	196	854	2,541	8.5	14	1,470	528	226	1,067	3,291	8.2	14
Atlanta	1,006	338	229	1,033	2,606	8.7	13	1,516	394	254	1,319	3,483	8.7	12
St. Louis	1,102	361	250	795	2,508	8.4	15	1,527	420	286	994	3,227	8.1	15
Indianapolis	550	253	281	1,255	2,339	7.8	17	750	294	308	1,569	2,921	7.3	19
Pittsburgh	900	195	142	1,083	2,320	7.7	18	1,200	227	142	1,354	2,923	7.3	18
Kansas City	1,102	270	285	678	2,345	7.8	16	1,527	326	312	848	3,013	7.5	16
Phoenix	950	345	233	699	2,227	7.4	19	1,382	401	273	874	2,930	7.3	17
Cincinnati	1,140	226	128	670	2,164	7.2	20	1,640	264	128	837	2,868	7.2	20
Cleveland	840	226	128	916	2,110	7.0	21	1,240	264	128	1,145	2,776	6.9	21
San Antonio	NA	265	247	1,310	1,813	6.0	24	NA	309	279	1,629	2,217	5.5	24
Columbus	990	201	128	578	1,898	6.3	22	1,440	234	128	723	2,525	6.3	22
New Orleans	290	393	115	1,039	1,838	6.1	23	399	457	115	1,339	2,311	5.8	23
Seattle	NA	414	238	996	1,648	5.5	25	NA	482	261	1,245	1,987	5.0	25
Dallas	NA	265	187	1,139	1,591	5.3	26	NA	309	205	1,425	1,939	4.8	26
Memphis	NA	406	176	769	1,351	4.5	28	NA	473	176	961	1,610	4.0	28
Houston	NA	265	220	910	1,395	4.7	27	NA	309	245	1,139	1,693	4.2	27
Nashville	NA	406	176	721	1,303	4.3	29	NA	473	176	901	1,550	3.9	29
Jacksonville	NA	223	166	499	889	3.0	30	NA	260	166	648	1,075	2.7	30
30-city average	908	306	196	1,157	2,567	8.6		1,374	357	211	1,454	3,397	8.3	

[1] Total of taxes does not always equal amount shown due to rounding.
NA—Not applicable.

Source: "Tax Burdens in Washington, D.C., Compared With Those in the Nation's Thirty Largest Cities, 1974," Department of Finance and Revenue, Government of the District of Columbia, February 1976.

In an effort to operationalize the comparable tax burden approach from this annual tax burden data, it is necessary to estimate the distribution of income in the District. These two items could then be combined to estimate the revenue the District would forego if it had average tax burdens across income classes.[26] This estimate represents an amount by which the Federal payment would have to be increased above the actual level. To estimate the absolute level of the Federal payment—rather than the annual marginal increment—one would have to (1) assume that the current expenditure level would prevail; (2) recognize that in the absence of the Federal payment the current level of local expenditures would have to be financed by higher taxes; (3) estimate the impact of these higher taxes on the total tax burdens of each income class; [27] and finally (4) combine this information with income distribution data to estimate the total revenue foregone if the District had only average tax burdens. For FY 1976, this means that the District would have had to raise $226.2 million in additional tax revenue—an increase of 38.6 percent.

There are a number of caveats associated with this approach which greatly limit its practical application. The most severe limitation is that the analysis is typically confined to residents of the District and does not include the business community.[28] If one extends the logic of this approach to the District's business community, it seems reasonable that one should not expect a business located in the District to bear a greater than average tax burden, solely as a result of the Federal presence.[29]

In any event, there is a critical relationship between the tax burdens of individuals and those of businesses. This is especially true when the taxing jurisdiction has the ability to export its taxes to nonresidents—e.g., energy producing States like Texas and Louisiana, large commercial or tourist centers like San Francisco, Los Angeles, Chicago or New York City. In these cases, the relation between in-

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[26] Since the bases for different taxes vary across cities it would not be desirable to insist that the District conforms to the average effort for each individual revenue source. This would result in the relative over- or under-use of particular revenue sources. The important element in this approach is that the total burden for each income group does not exceed the average. For a discussion of relative over- or under-use of particular revenue sources see "Tax Effort Comparison, 1974," by Carol Meyers, District of Columbia, Department of Finance and Revenue, July, 1976.

[27] There are an infinite number of alternative combinations of the changes which would raise this additional revenue and each method would have a different implication for the total tax burden for each income group. Thus, the deviation of the District's tax burdens from the 30 city average would depend on the manner in which the additional revenue was raised.

[28] The analysis presented in Table III represents an analysis of the direct impact of the tax structure and emphasizes the single family's tax liability. It is not an incidence study which would incorporate assumptions about the shifting of certain business taxes. Therefore, in order that the impact analysis be as comprehensive as possible, it is a logical necessity to include in the analysis the business sector.

[29] For example, five States—Nevada, South Dakota, Texas, Washington, and Wyoming—do not levy a tax on corporate income. Only six States—Arizona, Connecticut, Iowa, Massachusetts, Minnesota, and Pennsylvania—have statutory rates which exceed the District's 9.0 percent. Additional research is necessary before comparisons of effective rates could be made between States and the District.

dividual family tax burdens and service levels provided breaks down.

Aside from this significant omission, the comparable tax burden approach—inter and intra urban comparability—rests on some tenuous implicit assumptions. For example, by assuming that each income group should have a total tax burden equal to the average of the 30 cities precludes District residents from expressing a preference for allocating its tax burdens differently than other cities.

A second shortcoming of the tax burden approach is that it fails to consider the expenditure side of the budget equation. The local residents may either opt for a different expenditure mix—or even level—than the 30 city average—because of differential preference for public goods—or they may opt for a distribution of tax burdens which results in higher income classes having relatively higher—than the 30 city average—tax liabilities.

An additional limiting assumption implicit in this approach is that residents of the District desire or actually receive a comparable quality and quantity of services. That is, even if District tax burdens were equal to the 30 city average, the quality or quantity of services will not necessarily be equal. This should not automatically be considered undesirable, however, because city administrators, responding to different political constraints, may prefer a different resource mix even at the cost of a lower quality (quantity) of public services.[30] Additionally, residents of a city may simply demand an above average level of public goods thereby increasing their respective tax burdens. The Federal payment should neither encourage nor discourage the expression of this type of local preferences—i.e., it should be neutral.

Related to this question of differing preferences for public vs. private goods is the more complex question of defining public goods initially. For example, garbage collection in a city may be (1) privately contracted and therefore not a public good, (2) publicly provided but financed by a user charge thereby not affecting tax burdens or (3) publicly provided and financed out of general tax revenues. Therefore, in order to talk about comparable tax burdens among cities it is essential to have detailed information regarding the comparability of expenditure patterns and financing arrangements. Only looking at one component—tax burden—will be misleading.

Finally, focusing attention on tax burdens overlooks the question of allocating functional responsibilities between levels of governments and how these allocations differ among states. Thus, the measure of tax burden must include total state and local taxes not just local taxes. However, there may still be a problem of noncomparability since state taxes apply to a broader tax base so that the possibility of avoiding the tax by moving is significantly reduced relative to local taxes. The District does have a revenue structure which closely resembles that of a State, but because of its geographic limitation the bases to which these taxes are applied are very restricted.

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[30] Breton, Albert, "The Economic Theory of Representative Government," Aldine Publishing Co., Chicago, 1974.

Further, in some respects intra urban area tax burden comparisons are more important than inter urban comparisons. The intra urban comparisons focusing only on tax burdens should be viewed with the same skepticism as discussed above for the inter urban comparisons. However, since local jurisdictions are competing in a more tangible fashion for both residents and business, the importance of identifying and quantifying significant tax burden differentials is more apparent.

Table IV represents a selected listing of state and local tax rates for fiscal year 1977 as they vary across local jurisdictions in the metropolitan Washington area. The impact of these different tax structures on a hypothetical family of four—with income ranging from $5,000 to $40,000 per year—is presented in Table V.

TABLE IV.—SELECTED STATE AND LOCAL TAX RATES IN THE WASHINGTON METROPOLITAN AREA, FISCAL YEAR 1977

Tax	District of Columbia	Maryland			Virginia					
		Montgomery County	Prince George's County	Charles County	Arlington County	Alexandria City	Fairfax County	Loudoun County	Prince William County	Fairfax City
Real estate (rate per $100 of market value)	$1.83	$2.03	$1.99	$1.38	$1.51	$1.75	$1.74	$0.94	$1.50	$1.75
Sales and use:										
General rate (percent)	5	4	4	4	4	4	4	4	4	4
Groceries (percent)					4	4	4	4	4	4
Hotels, motels (percent)	8	9	9	4	6	8	6	4	6	4
Restaurant meals (percent)	8	4	4	4	4	5	4	4	4	4
Individual income (percent)	2-11	3-7.5	3-7.5	3-7.5	2-5.75	2-5.75	2-5.75	2-5.75	2-5.75	2-5.75
Corporation income (percent)	9+[1] 10	7	7	7	6	6	6	6	6	6
Beer (per barrel)	$2.25	$2.79	$2.79	$2.79	$7.80	$7.80	$7.80	$7.80	$7.80	$7.80
Spirits (per gallon)	$2.00	$1.50	$1.50	$1.50	(2)	(2)	(2)	(2)	(2)	(2)
Light wines (per gallon)	$0.15	$0.40	$0.40	$0.40	$0.35	$0.35	$0.35	$0.35	$0.35	$0.35
Heavy wines (per gallon)	$0.33	$0.40	$0.40	$0.40	$0.70	$0.70	$0.70	$0.70	$0.70	$0.70
					Plus an additional tax of 15 percent of retail price					
Cigarettes[3] (per pack)	$0.13	$0.10	$0.10	$0.10	$0.075	$0.125	$0.075	$0.025	$0.025	$0.09
Personal property	$2.82	$4.06	$3.98	$2.75	[4] $5.90	[4] $5.20	[4] $4.80	[4] $5.00	[4] $5.65	[4] $5.97
Applies to autos	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Motor vehicle excise (percent)	4-7	4	4	4	2	2	2	2	2	2
Gasoline (per gallon)	$0.10	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09	$0.09

[1] Surtax.
[2] Sold through State stores. Tax equal to 15 percent of retail price.
[3] Cigarettes are also subject to the general sales tax in all these jurisdictions.
[4] The rates shown apply to automobiles and are based on market value. The definitions of market value differ in each jurisdiction.

Source: Federal Payment, Fiscal Year 1978, Mayor's Office, government of the District of Columbia, Sept. 1976.

TABLE V.—MAJOR STATE AND LOCAL TAX BURDENS FOR A FAMILY OF 4 RESIDING IN SELECTED WASHINGTON METROPOLITAN AREA JURISDICTIONS, 1975

Tax	District of Columbia	Maryland			Virginia					
		Montgomery County	Prince George's County	Charles County	Arlington County	Alexandria	Loudoun County	Prince William County	Fairfax City	Fairfax County
$5,000 Income:										
Income	$2	$42	$42	$42	$26	$26	$26	$26	$26	$26
Real estate	265	242	244	190	210	270	199	170	248	226
Sales and use	116	74	74	74	193	103	103	103	103	103
Automobile	72	65	65	65	107	109	103	94	101	99
Total	451	423	425	371	448	508	431	393	478	454
Rank	(4)	(8)	(7)	(10)	(5)	(1)	(6)	(9)	(2)	(3)
$10,000 Income:										
Income	250	380	380	380	175	175	175	175	175	175
Real estate	408	372	376	292	323	415	306	262	382	347
Sales and use	180	118	118	118	154	154	154	154	154	154
Automobile	99	94	94	94	189	193	185	148	164	174
Total	937	964	968	884	841	937	820	739	875	850
Rank	(4)	(2)	(1)	(5)	(8)	(3)	(9)	(10)	(6)	(7)
$15,000 Income:										
Income	493	626	626	626	388	388	388	388	388	388
Real estate	582	530	535	415	460	591	436	373	543	494
Sales and use	235	155	155	155	196	196	196	196	196	196
Automobile	150	136	136	136	273	279	265	219	243	250
Total	1,460	1,447	1,452	1,332	1,317	1,454	1,285	1,176	1,370	1,328
Rank	(1)	(4)	(3)	(6)	(8)	(2)	(9)	(10)	(5)	(7)

$20,000 Income:										
Income	810	945	945	945	620	620	620	620	620	620
Real estate	736	669	678	526	583	746	550	472	686	625
Sales and use	282	187	187	187	231	231	231	231	231	231
Automobile	170	136	136	136	301	309	294	233	261	275
Total	1,998	1,937	1,946	1,794	1,735	1,906	1,695	1,556	1,798	1,751
Rank	(1)	(3)	(2)	(6)	(8)	(4)	(9)	(10)	(5)	(7)
$30,000 Income:										
Income	1,545	1,583	1,583	1,583	1,108	1,108	1,108	1,108	1,108	1,108
Real estate	977	896	904	699	775	998	733	627	914	832
Sales and use	355	223	223	223	276	276	276	276	276	276
Automobile	195	173	173	173	422	436	412	309	351	381
Total	3,072	2,875	2,883	2,678	2,581	2,818	2,529	2,320	2,649	2,597
Rank	(1)	(3)	(2)	(5)	(8)	(4)	(9)	(10)	(6)	(7)
$40,000 Income:										
Income	2,370	2,220	2,220	2,220	1,597	1,597	1,597	1,597	1,597	1,597
Real estate	1,222	1,119	1,127	877	972	1,246	916	787	1,148	1,041
Sales and use	428	260	260	260	321	321	321	321	321	321
Automobile	195	173	173	173	490	507	481	343	395	440
Total	4,251	3,772	3,780	3,530	3,380	3,671	3,315	3,048	3,461	3,399
Rank	(1)	(3)	(2)	(5)	(8)	(4)	(9)	(10)	(6)	(7)

Source: Federal Payment: fiscal year 1978, Mayor's Office, government of the District of Columbia, table 25, Sept. 1976.

Table V shows that for incomes of $5 and $10,000 the District has the 4th highest total tax liability of the ten jurisdictions which comprise the Washington metropolitan area. For annual incomes above $15.000, no jurisdiction imposes a higher total tax liability on a family of four than the District. Additionally, for every income class, the District's total tax liability exceeds the average of the ten jurisdictions—the percentage excess increases constantly from 2.9 percent for a family in the $5.000 income class to 18.4 percent in the $40,000 income class. This differential between the District's tax burden and the burden of the competing local jurisdictions may not be detrimental—by influencing location in the District—if the families facing the location decision perceive a difference in the service levels or mix between the District and other jurisdictions. If the perceived benefit of locating in the District exceeds the differential in tax burdens the decision will clearly be to locate in the District. Conversely, if the 'cost' differential exceeds the benefits the decision will be to locate elsewhere. Therefore, to comprehensively assess the impact of tax differentials on the location decisions of households (and businesses) it is necessary to consider simultaneously expenditure benefit differentials between jurisdictions.[31]

Fixed Percentage Approach

The fixed percentage approach—where the Federal payment is a fixed percentage of either revenues or expenditures—to determining the level of the Federal payment is administratively superior to the previous measures. However, unlike the previous approach, this method lacks a firm conceptual base. Because of this conceptual weakness the discussion of this approach involves not only a debate over the appropriate percentage, but also over the appropriate base. For example, the Poland Report (1874) suggested that the Federal government's fiscal responsibility was equal to at least half of the District's total expenditures. However, in implementing this "50–50" funding arrangement, the Organic Act of 1878 provided that the Federal government match, dollar for dollar, locally raised revenues derived from municipal taxes—i.e., the base is tax revenues not total expenditures.

For a given percentage—based on historical events discussed above a 40–60 split between Federal and local responsibility has evolved—the initial size of the payment would be greater if the base were total expenditures rather than if the base were tax revenues. This is true because approximately one-quarter of total District expenditures are financed by categorical or block grant programs which would be included in an expenditure base, but would not be included in a tax revenue base. Additionally, choosing expenditures rather than own source revenues as the base provides an incentive to local decision makers to increase spending levels beyond what would occur in the absence of the grant.

When the base of the fixed percentage approach is total expenditures, the Federal government is, in effect, changing the relative prices of public goods facing the local decision makers. For example, assuming

[31] Greene, K., Neenan, W., and Scott, C., "Fiscal Interaction in a Metropolitan Area," Lexington Books Lexington, Mass. 1974.

no tax reductions, the "cost" to the local government of one more employee is no longer $12,000 per year, but rather merely $6,000 since the Federal government will cover half of all expenditures. The result of this type of price distortion is an increased consumption of the Federally subsidized good, thereby resulting in a larger local public sector. This price affect also has serious implications for local investment decisions. Given a particular benefit level of an investment project a reduction of the cost of the inputs by 50 percent has serious consequences on the outcome of a benefit-cost study. Specifically, projects which were formally designated as not being attractive alternatives suddenly became feasible. This again results in a larger local public sector.

Alternatively, when the base of the fixed percentage approach is local own source revenues, relative prices are not changed. Rather, the Federal government—by a lump sum transfer of money—merely increases the resources available to local governments.[32] For example, the "cost" to the local government of an additional employee will remain $12,000 per year, but because of the lump sum transfer the local government is "richer" and therefore able to purchase the time of more employees. The local public sector will be larger under this approach than it would be if no transfer took place, but it would be smaller than if the base had been total expenditures. A simple example will illustrate the point. Assume that local decision makers are evaluating a proposed 10 percent increase in local expenditures—say from $1 billion to $1.1 billion. Under the fixed percentage approach there are two possible scenarios: 1) assume that total expenditures are used as the base for computing the Federal payment, or 2) assume that own source revenues are used as the base. In both cases, assume that the Federal government will provide the District with an amount equal to 40 percent of the appropriate base. Thus, under the first assumption—expenditures are the base—the Federal government would pay for $40 million of the proposed increase and the remaining share would be covered by locally raised revenues. However, in the second case—own source revenues are used as the base—the Federal share would be only $28.6 million leaving a local share of $71.4 million—almost 20 percent more than under the first assumption. Therefore, the "cost" of increasing total expenditures 10 percent is higher—and thus less attractive—in the second case than in the first.

While the simplicity of this approach is attractive, the conceptual weakness is critical. Most important, this approach makes no explicit recognition of the extraordinary Federal presence, thereby leading to the possibility of some perverse results. For example, if the Federal government increased the amount of exempt property the Federal payment—if based on own source revenues—would decrease, not increase as might be expected. This alternative—of basing the Federal payments on own source revenues—also neglects new elements which impose net costs on the local governments—e.g., national demonstrations. This also leads to the criticism that the fixed percentage approach assumes a static relationship between the Federal presence and the District. However, this fixed percentage approach recognizes that the decision regarding the level of the payment is essentially political, but builds some certainty into the decision making process.

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[32] This does, however, lower the "effective" tax price paid by D.C. residents.

STATE REDISTRIBUTION APPROACH

In a recent report [33] the Advisory Commission on Intergovernmental Relations (A.C.I.R.) documents a dramatic realignment of functional responsibilities between levels of governments. The report found that "Nearly one-third of the 3319 municipalities responding to our national survey have transferred responsibility . . . to other governmental units during the period 1965 to 1975." More importantly, "Survey data clearly indicates that that tendency to transfer functional responsibility is related directly to population size." The survey also showed that mayors, managers and other municipal officials overwhelmingly favor shifting responsibilities to county governments rather than regional special districts or State or Federal governments. The District is unique in that none of these opportunities of shifting responsibilities exist for its government officials—except for shifting responsibility to the Federal government. Thus, the District has the financial obligation to provide a broad mix of public goods, but is required to finance the provision of these goods with a state/local type revenue structure which can only be applied to a very restricted tax base. Thus, the conclusion of the ACIR report that

> * * * the growing financial problems of large central cities housing an increasing percentage of low income families will augment the pressure for the transfer of either complete or financial responsibility for expensive functions, such as public education and public welfare, to the State or Federal governments.[34]

is not applicable to the District. As a result of this situation, the District does not benefit from suburban/center city redistribution as is experienced in other metropolitan areas which are wholly contained in one state. The state redistribution approach addresses this problem.

The state redistribution approach is by far the most abstract approach discussed here. It does have, however, as strong a conceptual foundation as any of the approaches analyzed above. Basically, this approach treats the metropolitan Washington area as if it were entirely located within one state jurisdiction. The presumption is, that by being entirely contained in one state, the central city would benefit from state redistribution from the surrounding richer suburban areas. Since the metropolitan Washington area is not completely contained within one state this redistribution from suburbs to the central city does not occur. Therefore, the Federal payment should compensate the District for this loss, since it results from the District's unique role as the Nation's capital.

This approach would result in a Federal payment greater than the current level. In FY 1974, the Federal payment using this approach would have been between $200 and $250 million.[35] This amount compares to the actual payment level in FY 1974 of $187.45 million—a difference of between 6.7 and 33.4 percent. This transfer of funds, from richer to poor jurisdictions, occurs because Maryland and Virginia—through cash grants and public good provision—return to wealthier jurisdictions only 70 to 75 percent of each tax dollar raised [36] while

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[33] "Pragmatic Federalism: The Reassignment of Functional Responsibility," Advisory Commission on Intergovernmental Relations, July 1976.

[34] Ibid., p. 69.

[35] Statement by Thomas Muller and Grace Dawson, House District Committee Hearings, 94th Congress, 2nd Session, Serial No. 94–16, March 11, 1976, p. 35.

[36] "Metropolitan Fiscal Analysis," volume 5, Council of Governments, forthcoming.

the return to poor jurisdictions—central cities, rural areas—typically exceeds these levels.[37]

The primary weakness of this approach is that it does not explicitly consider the impact of the extraordinary Federal presence on the economy of the District. Instead, the Federal payment is used to restructure the revenue structure of the District so that it more closely resembles that of other central cities. A broader interpretation of the impact of the Federal presence—i.e., the District being the Nation's capital—may encompass this type of impact.

Like other measures discussed above, the state redistribution approach is characterized by a variety of administrative difficulties. First, it is difficult to trace the flow of dollars—taxes paid and grants-in-aid received—between the state and the local jurisdiction.[38] Second, it is infinitely more difficult to quantify the benefits received from various state programs and to determine how these benefits are distributed across various local jurisdictions. Finally, and perhaps most important, the level of the Federal payment will be directly affected by the policy decisions made in some state capital rather than being tied to the changing relationship between the Federal government and the District.

IV. The Current Procedures for Determining the Level of the Federal Payment

The annual determination of the level of Federal payment is a very complex process involving at least five different governmental bodies: the D.C. Mayor's office, the City Council, the Office of Management and Budget (OMB), and the Senate and House Appropriation subcomittees on the District of Columbia. The Mayor's office originates the process by estimating an amount to be requested from Congress. The District's role in the entire process is spelled out in detail in Title V of P.L. 93–198, 1973—the District Home Rule Act. The House Committee on Appropriations, Subcommittee on the District of Columbia makes the final determination. The process followed by Congress is not articulated comprehensively in any one place, but has its foundation in the Budget and Accounting Act of 1921 and has evolved over time through the promulgation of regulations, judicial decisions and agency precedent. Despite the amorphous nature of Congress' role in this process, Congress found it necessary to preserve the process by including section 603(a) of Public Law 93–198 which states that:

> Nothing in this Act shall be construed as making any change in existing law, regulations, or basic procedure and practice relating to the respective roles of Congress, the President, the Federal Office of Management and Budget, and the Comptroller General of the United States in the preparation, review, submission, examination, authorization and appropriation of the total budget of the District of Columbia government.

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[37] Since a portion of the funds raised by all jurisdictions is used to finance the general administration of the State government—legislation, judicial and executive branches—no jurisdiction expects to receive more than 100 percent of their contribution to the State Treasury in the form of direct transfers of goods and services.

[38] For an attempt to trace Federal funds flowing to one specific local jurisdiction see "The Impact of Federal Grants-in-Aid in Richmond, Virginia and a Proposed Community Strategy Process," Richmond Study Task Force, Federal Regional Council, Philadelphia, Pennsylvania in co-operation with the Office of Management Budget, Washington, D.C., December 13, 1971.

The following discussion highlights the role of each participant in this annual determination of the Federal payment.

THE MAYOR AND THE COUNCIL

According to Title V of Public Law 93–198 (December 1973), the Mayor has the responsibility for initiating the process for determining the level of Federal payment. His requested appropriation is to be based on a study of ". . . costs and benefits to the District which result from the unusual role of the District as the Nation's Capital." This study

> * * * should, to the extent feasible, among other elements, consider—
> (1) revenues unobtainable because of the relative lack of taxable commercial and industrial property;
> (2) revenues unobtainable because of the relative lack of taxable business income;
> (3) potential revenues that would be realized if exemptions from District taxes were eliminated;
> (4) net costs, if any, after considering other compensation for tax base deficiencies and direct and indirect taxes paid, of providing services to tax-exempt non-profit organizations and corporate offices doing business only with the Federal Government;
> (5) recurring and nonrecurring costs of unreimbursed services to the Federal Government;
> (6) other expenditure requirements placed on the District by the Federal Government which are unique to the District;
> (7) benefits of Federal grants-in-aid relative to aid given other States and local governments;
> (8) recurring and nonrecurring costs of unreimbursed services rendered the District by the Federal Government;
> (9) relative tax burden on District residents compared to that of residents in other jurisdictions in the Washington, District of Columbia, metropolitan area and in other cities of comparable size.

Section 501(a) of Title V requires that the Council and the Federal Office of Management and Budget use the results of this study "* * * in reviewing and revising the Mayor's request * * *." Interestingly enough, Congress is exempt from this mandate.

Upon the completion of this study, the Mayor formulates a requested level of payment and submits his request to the Council. The Council, then shall act to approve, disapprove or modify the Mayor's request. After the action of the Council the Mayor shall transmit, by December 1 of each calendar year, such request to the President of the United States.

Section 502 of Title V establishes maximum authorization of $300 million for fiscal year 1978 and each fiscal year thereafter.

THE PRESIDENT

The President receives from the Mayor a balanced budget which includes a requested level of appropriation for the Federal payment. Before the President submits the budget for Congressional review, OMB reviews the entire budget. However, presumably showing some sensitivity to the spirit of the "Home Rule" Act, OMB typically limits its recommendations to the determination of the appropriate level of the Federal payment. According to Section 501(a) of the "Home Rule" Act, OMB is to base its review and revision of the

Mayor's requested appropriation on the results of the Mayor's study of the costs and benefits to the District which result from the Federal presence. After this review process, the budget—which as a result of OMB recommendations may or may not be in balance—is submitted to Congress for its review.

THE CONGRESS

Currently, the House District Committee has primary responsibility for evaluating the revenue package (tax and user charges) submitted by the District Council and Mayor. The House Appropriations District Subcommittee evaluates proposed expenditures and the level of the Federal payment. Thus, in the Congressional review process the Federal payment is not generally viewed as an integral part of the overall budget, but rather is the only revenue component reviewed in conjunction with total expenditures. This creates a situation in which the Congress may decide to cut requested local expenditures thereby imposing a Congressional preference and in so doing also cut the Federal payment—dollar for dollar. Conversely, if Congress decides to increase certain expenditures the Federal payment may also be increased. Thus, the impression is left that the determination of the level of Federal payment is somehow tied to expenditure decisions. Essentially, this process provides Congress with an opportunity to interfere in the District's attempts to set expenditure priorities and places the Federal payment in the role of enforcing Congressionally established expenditure priorities. Historically, Congress exercises this prerogative more liberally than the Executive, who has generally restricted his recommendations to the determination of the level of the Federal payment.

Improving the Predictability of the Federal Payment [38a]

The two previous sections dealt with alternative methodological approaches of, and the process for, determining the level of the Federal payment. Neither of these sections focuses explicitly on the uncertainty—from the perspective of the District fiscal planners—inherent in the determination of the level and timing of the Federal payment. The concept of advanced appropriations or advanced funding is one approach which would focus directly on improving the predictability of the payment irrespective of the methodological approach embraced or the decision-making process relied on for determining the level of the payment.

PRECEDENTS IN THE USE OF ADVANCE APPROPRIATIONS/ADVANCE FUNDING

Advanced appropriations have been used in Federal programs since 1962. Among the programs which have been covered in this manner are: airport construction, urban renewal, mass transportation, the Washington subway system, education, and public broadcasting. Requests for such funding were also made for the Appalachian Regional Development Commission and the Model Cities Program, but in these two cases, other methods of advance funding were determined more beneficial.

[38a] This section was prepared by Margaret J. Moore of the Commission Staff.

Some of the legislative actions which have included provisions for advanced appropriations are: Elementary and Secondary Education Act of 1967, Vocational Education Amendments of 1968, Economic Opportunity Amendments of 1969, National School Lunch Act and Child Nutrition Act of 1966, Comprehensive Employment and Training Act of 1973, and the Public Broadcasting Financing Act of 1975. These legislative actions are included here only to indicate that the concept of advance appropriations is not a new or untested idea.

According to a recent report by the Congressional Budget Office (CBO), about 70 percent of federal spending is already determined by some kind of advance funding decision. Congressional action which provides certain moneys in the current year may have been decided "anywhere from 12 months in advance of the start of the fiscal year to 130 years beforehand." [39]

Since there are precedents the question becomes, then, not a legal question but a philosophical and political one: Should one Congress make commitments which binds another Congress? Although this is not a trivial issue, this concern should not be a deciding factor. The evidence clearly indicates that advanced appropriations and multi-year appropriations should be considered as alternatives to current methods. The decided advantages of these advance funding alternatives should be weighed against the potential concerns of the Congress that these alternatives diminish its future oversight responsibility and control.

The term "advanced appropriations" is sometimes inaccurately used to refer to other methods of advance funding. Among these methods are: contract authority, borrowing authority, entitlements, permanent appropriations, and forward funding. (Certain grants, trust funds, and revenue sharing might be included in this list, but in most cases these can be fitted into one of the above catgeories). All of these have been investigated to determine if any provide more acceptable or desirable ways of handling the Federal payment process. In many cases, the identification of these funding devices seems to be somewhat elusive and imprecise, and the explanation of each depends on who is defining it. For the purposes of this discussion, the definitions, presented in the latest CBO report on this topic will be used: [40]

Contract authority, which provides planning and administrative lead time by authorizing the government to enter into contracts in advance of the actual appropriations (Example: Highway Trust Fund):

Borrowing authority, which authorizes obligations out of borrowed moneys (Example: Federal Deposit Insurance Corporation):

Entitlements, which provide for payment to any person or unit of government which meets * * * (certain) * * * requirements by law (Example: Veterans' Administration benefits):

Permanent appropriations, which establish budget authority in an amount determined by previously enacted legislation (Example: Education programs).

Even the more closely related terms "advance appropriations" and "multi-year appropriations" should be distinguished. CBO explains

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[39] Advance Budgeting: "A Report to the Congress", Congressional Budget Office, Feb. 24, 1977, p. 9.

[40] "Advance Budgeting: A report To The Congress—A Compilation of Technical Background Papers", Congressional Budget Office, March 1977, pp. 75–76.

the two in this way: advance appropriations provide funding one fiscal year or more before any of the money can be obligated; multi-year appropriations provide funds which are available for obligation in several fiscal years, but not in specified amounts for each year in the period.[41]

Many of the methods of advance funding are not appropriate for the Federal payment process. Because most approaches have been initiated in order to deal with specific Federal agency or state/local programs, and because the District of Columbia is a unique case, most of these funding mechanisms cannot be readily adapted to the Federal payment process. One of the reasons the Federal payment does not conveniently fit into some of the other funding arrangements is due to the fact that this money is not separated from other D.C. revenue and is not designated for specific uses.

RECENT RESEARCH EFFORTS

The Office of Management and Budget, the Congressional Budget Office, and the Advisory Commission on Intergovernmental Relations have been actively engaged in the investigation and evaluation of the benefits of advance funding to various agencies and state/local programs.

In a recent report, the OMB has stated that the significant factors to be considered regarding advanced funding are:[42]

1. The need to make decisions in the context of longer-range planning.
2. The need for the Government to be responsive and to adapt to changing needs.
3. The need to relate budget plans for individual programs to the budget as a whole and to fiscal and economic policy.

The OMB also stated that:

Executive Branch agencies should cooperate with State and Local governments in developing recommendations for a limited number of programs to receive forward funding or advance appropriations. Such recommendations should focus on those programs that would benefit most from certainty of funding.

In its report to the Congress, the Congressional Budget Office recommends that:

* * * the Appropriations Committee evaluate federal programs for funding state and local activities, using criteria stated in the report, to determine whether any not funded a year or more in advance should be so funded . . .

* * * the Appropriations Committee (should) establish standards acceptable to themselves for the identification of programs amenable to a two-year appropriations cycle, and assign to a legislative agency, in conjunction with the OMB, the task of preparing a list of programs so amenable, and a plan for shifting them to two-year appropriations, to be submitted to the Congress for its considerations.

In its recent studies of categorical and block grant programs, the Advisory Commission on Intergovernmental Relations recommended

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[41] Ibid., p. 76.

[42] "A Study of the Advisability of Submitting the President's Budget and Enacting Budget Authority in Advance of the Current Timetable", Office of Management and Budget. January 1977, p. 5.

". . . that Congress in consultation with representatives of state and local governments take steps to reduce funding uncertainties, including . . . evaluation by the Appropriations Committee of existing (categorical) grant activities to determine whether any additional one should be funded a year or more in advance . . ." The ACIR report included specific recommendations for authorization and appropriations ranging from one to multi-year advance budgeting decisions.

The process for determining the Federal payment is unique and thus not directly analogous to state/local Federally funded grant programs. However, the advantages/disadvantages and criteria for decision-making can be compared because both the D.C. Government and state/local agencies have a common need for predictability in the level and timing of funding.

In its recent report the CBO has suggested certain criteria which may be applied in determining when advance funding is appropriate. Essentially, these criteria demand that: The "program" or funding recipient has no alternatives available (i.e., the need cannot be met in other ways; that it cannot be dismissed or substituted for); that the program is "large;" that predictability—planning and certainty of funding—is critical to the program.

Arguments could be made for 2-year advance appropriations or multi-year appropriations. Both of these alternatives would surely offer greater certainty in funding. However, the following disadvantages discourage attempts to initiate these methods:

1. The concerns of Congress about the difficulty of forecasting a recipient's warranted level of funding for 24 compared to only 12 months ahead, and the decrease in Appropriations Committee oversight which two-year or multi-year appropriations represent.
2. Two-year and multi-year appropriations are more easily justified in cases which require long-term funding for capital projects. These methods are not as justifiable for general operating expenses for which the Federal payment is used.
3. The restrictions which two-year and multi-year funding decisions placed on the District itself. The question must be asked, "Does the District want to agree to levels of funding that many years in advance?" Considering the fluctuations in the economy, and Federal/District relationship, it could be difficult to project with confidence what moneys it is appropriate to request beyond one-year advance. Even if it were possible to request one or more supplements to the agreed upon payment, this could compromise the District's position for future years' funding.

As CBO stated: "The shorter the cycle, the greater is the reliability of the economic forecasts and the estimates of budgetary outlays."

FINDINGS

There are many precedents for advance funding and many ways in which this may be accomplished.

The most viable alternative (insofar as the Federal payment is concerned) is 1-year advance appropriations. Under the current Fed-

eral payment process, appropriations for a given fiscal year are conventionally provided during the session of Congress in which the fiscal year begins. Under the one-year appropriations method, the appropriations would be enacted one year in advance of the year in which the appropriation becomes available for obligation. This means that the funding for a given fiscal year would become available on the first day of that fiscal year. The crucial issue here is not the certainty of the level of funding but the advance knowledge of that level. In other words, the advantage is primarily one of timing. Fiscal planners would know one full year previous to the beginning of the current fiscal year what the Federal contribution would be for the next year and could plan budgets accordingly.

To summarize, the 1-year advance appropriations technique offers the following advantages:

1. It insures certainty of level for the Federal contribution to District finances one full year in advance of the conventional annual appropriation.
2. In offers greater flexibility than two-year or multi-year appropriations in allowing for unpredictable funding changes which may be necessitated by fluctuations in the economy.
3. It enhances the District's financial planning and facilitates the budgeting process.

In contrast to the above, by the annual appropriations method, the level may not be known until the fiscal year is already well underway. This provides inadequate lead time, inhibits long-term planning, and compromises the fiscal integrity of the District.

V. Conclusions and Recommendations

The annual Federal payment to the District of Columbia is a significant revenue source which has the potential of generating substantial additional revenue for the District. From the perspective of District residents and policy makers, the payment represents one means of successfully addressing the projected revenue gap in the District without adversely affecting the desirability of the District to potential residents—families or businesses. However, based on the foregoing discussion, the conclusions that one is able to draw about the appropriate level of the Federal payment are at best ambiguous.

This ambiguity follows from the conceptual and operational problems inherent in the attempts to make various quantitative measures of the impact of the Federal presence. These problems by necessity make the process "political." This political aspect of the process has at least two dimensions—neither of which is the primary focus of this discussion. First, there is the fundamental problem of choosing between the alternative approaches discussed above. The answer to that question differs among individuals according to their perception of the extent of the Federal responsibility toward the District. Therefore, the choice of one approach rather than another is by definition political.

Even if there were a consensus on which approach to use in computing the Federal payment, a second dimension of the political nature of

the process still exists. Specifically, individuals may differ in their perceptions of what constitutes a cost or a benefit of the Federal revenue. Additionally, even if there was agreement on this point, attempts to reduce these elements to their least common denominator—the dollar—may not always produce the same results.

It was because of a general sensitivity to these realities of the decision-making process which led the Nelsen Commission to conclude:

> The fiscal relationship between the District and the Federal government has always been difficult to define, let alone quantify. Further study of the Federal payment should not proceed on the premise that a mathematical answer exists, for the subject is not believed to be amenable to such precision.

Recognizing that the conceptual and operational weaknesses associated with current approaches of estimating the impact of the Federal presence create the potential for political considerations to influence the determination of the Federal payment, it would be appropriate at this point for the Commission to reaffirm the Nelsen Commission's findings on this issue.

In so doing, however, one need not necessarily conclude that the current political environment in which the level of the Federal payment is determined is inherently undesirable. Given the dynamic forces which continually reshape the Federal/District fiscal relation, this method of determining the payment may have a desirable flexibility. However, certain consequences of the current approach need to be explicitly articulated. Two particular consequences are of concern:

(1) As the distribution of political power changed over time the Federal Payment—or at least the annual change in the payment—may be affected significantly. Because of this and other uncertainties inherent in the current process, the District's budget process and fiscal planning efforts are seriously compromised.

(2) In light of the conceptual and operational problems inherent in the approaches discussed above, the Congress loses some credibility by continuing to claim that the Federal payment represents some objective measure of the Federal impact on the District

In order to address these concerns, energy need not be diverted to try and answer questions which are essentially subjective in nature. A preferable approach—and one which is potentially amenable to "solution"—is to concentrate, as done here, on the actual decision making process and how it might be altered in an effort to construct a milieu in which the two problems just mentioned can be addressed.

Some people will not find this approach very satisfying. To date, most studies of the Federal payment have focused on how (what formula?) to determine the appropriate level of the payment. Consistent with the findings of the Nelsen Commission Report, the foregoing analysis indicates the likelihood of objectively determining or justifying a specific level of payment with current techniques is minimal. Consequently, energy spent pursuing such a goal—in isolation—is not productively spent. Therefore, in order to make a constructive contribution, it is necessary to focus attention on the process—as discussed above—by which the level of the Federal payment is determined. By changing that process some of the above mentioned problems associated with the current approach can be ameliorated.

In order to both improve the credibility of the process by which Congress determines the level of the payment and the predictability of the payment, it would be prudent to remove any existing incentives which encourage the use of the Federal payment for anything other than a measure of the Federal government's fiscal responsibility to the District. That is, the Congressional determination of the level of the Federal payment should be done in isolation of any other Congressional budget oversight responsibilities. While this procedural improvement would not guarantee predictability it would create an environment where attention could be focused on the issues of what the Federal payment represents and how it could be best calculated without being clouded by other—mutually exclusive—budgetary concerns.

At least two possible approaches to this problem exist. First, Congress could shift budget responsibility to the District government and not concern itself with an item by item review and only maintain its responsibility of calculating the Federal payment. This approach seems most in keeping with the Congressionally stated purpose of the Home Rule Act which reads:

> * * * to the greatest extent possible, consistent with the constitutional mandate, relieve Congress of the burden of legislating upon essentially local District matters.

Not only would this approach further the Congressional intent of the Home Rule Act, but it would also help Congress in its efforts to streamline operations. In fact, the Senate has just recently acted to abolish the Senate District Committee and transfer its responsibilities to a subcommittee of the Senate Government Operations Committee. The House could do likewise.

A second—less ambitious—approach would separate the budget review responsibility from the process of determining the Federal payment, but both would still reside with the Congress. The process would gain credibility and Congress could potentially improve the execution of their budget review responsibility. This latter benefit could be obtained if the budget review process was consolidated so that one Committee—e.g., House Appropriations Subcommittee on D.C.—would review the entire budget, while another committee—e.g., the House District Committee—determined the level of the Federal payment. However, this approach would still require the Congress to allocate resources to carry out an item by item review of the District's budget—an expense which would be eliminated if the previous option were pursued.

In either case, the Congressional process of determining the level of the Federal payment—which is at issue here—would be improved since attention would be more clearly focused on the separate—and mutually exclusive—issues of budget review and Federal payment determination. However, this would not be a sufficient reform of the current process to insure predictability of the Federal payment and thereby improve the District's budget process. Therefore, the alternative of one-year advance appropriations is suggested as one means of removing this uncertainty.

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Precedents for advance appropriations have been established. Recent research on the subject by OMB, CBO, and ACIR indicate the advisability of considering this funding mechanism in cases where agencies are currently trouble by or programs compromised by lack of funding predictability.

One last recommendation should be considered. In 1972, the Nelsen Commission set out criteria for consideration in setting the Federal payment. In order of priority, these criteria were:

(1) The payment should be predictable.

(2) The payment should operate to encourage District efforts to raise more revenue.

(3) Th payment should be based on the previous years' authorization and operate to avoid wide fluctuations impacting adversely on the District's ability to plan.

(4) To the extent possble, the payment should reflect extraordinary net costs of the Federal presence to the District.

In Title V of P.L. 93–198 (the Federal payment section of the Home Rule Act), Congress focused its attention entirely on item four—the least important item of concern to the Nelsen Commission. The list of items "which should be considered, among others" suggested by the Nelsen Commission for discussion purposes only, were reproduced in Title V of the Home Rule Act as items the District *must* consider in formulating the annual request for Federal payment. The Congress also required that these items be estimated on an annual basis. Most of these items, and the problems inherent in their estimation, have been discussed in the body of the report. Therefore, it would be advisable to reconsider the desirability and necessity of the current amount of effort and resources expended in pursuit of this mandate. While it would be useful and desirable to have this data, resources may be more efficiently allocated by comprehensively evaluating and improving these factors periodically, not annually. Therefore, one might consider recommendations to change Title V of Public Law 93–198 which would re-focus the efforts of the Department of Finance and Revenue from annually computing data of questionable value to efforts to improve current and develop new methodological approaches for gauging the Federal impact on the District.

Determining the appropriate level of the Federal payment is currently a very topical issue as a result of recent Congressional efforts to appropriate a Federal payment in FY 1978 which is almost $25 million less than the Congressionally established maximum authorization. In view of this public debate, it will be especially difficult to elevate the Commission's discussion above the short-run concern for justifying a higher level of payment to consideration of the larger concern focusing on current procedures for determining the level of payment. However, in keeping with the Commission's expressed preference for focusing attention on consideration of structural improvements in institutional variables so as to insure and promote long-run success, these recommendations are submitted as a departure point for further discussion.

Housing Speculation and the "Transaction Excise"

(By Louis A. Rose, Department of Economics, University of Hawaii)

I. Introduction

Since 1970, District of Columbia tenants in several neighborhoods have experienced increasing constraints on their housing choices. Rents of uncontrolled dwellings have been rising. Evictions preceding the rehabilitation of rentals and their sale for owner occupancy have been common. The relocation of District tenants is a costly process, fraught with socio-psychological adjustments and leading to less preferred dwellings and/or higher rents. Most potential homeowners have not fared well either, for the prices of dwellings in these neighborhoods have dramatically risen. With the increasing market values, those who already own homes have found their property taxes rising.[1]

The causes of the increasing constraints on housing choice are now the subject of inquiry. Historically speaking, the landlord has been considered the source of tenant woes. In this particular case, he shares notoriety with the "speculator." While partial rent controls have constrained some District landlords' ability to raise the rent, controls have not prevented them from selling to the speculator. Indeed, in the neighborhoods witnessing tenant displacement, the record shows exceptionally high buying and selling activity, short periods of ownership, and substantial increases in resale over purchase price,[2] placing an increasing number of dwelling out of reach for low-income and some moderate-income households. A common view contrasts speculators' undeserved profits with the welfare losses of households from higher prices and evictions. One or more of these associations has led some to believe that speculators are the cause of the housing problem, and that the District government ought to curtail their activities. Legislation to achieve this curtailment was first introduced at the District Council in 1975, and modified bills were prepared in 1976 and 1977.[3] All of the proposals are intended to deter short-term speculative real estate investment by taxing the transfer of residential property, provided the transfer is "speculative."[4] We shall analyze the major provisions of the 1976 and 1977 versions of the tax. The two versions are essentially the same, except the latter exempts rehabilitated property.

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[1] The median monthly rent in the Washington metropolitan area increased from $142 in 1970 to $190 in 1974, an increase of 34 percent. The median market value of owner-occupied housing in that area increased from $28,034 in 1970 to $48,000 in 1974, an increase of 72 percent. The 1970 figures are from U.S. Bureau of the Census, *U.S. Census of Housing: General Housing Characteristics, Final Reports*. HC (1)–AID. HC (1)–A22. The 1974 figures are from Washington Center for Metropolitan Studies, *Washington Area Census Updating Information, Trends Alert* (May 1975). The costs to some tenants, in non-monetary terms, have been described in Cynthia Gorney, *Washington Post*, (November 7–11, 1976).

[2] Council of the District of Columbia, Committee on Finance and Revenue, *Facts About Real Estate Speculation*, (ca. 1975).

[3] The first proposal introduced was Bill No. I–57/April 1, 1975. The 1976 version treated in this paper is Council of the District of Columbia, Committee on Finance and Revenue, *Committee Draft, Title IV*, (September 17, 1976). The 1977 version is still (August 1, 1977) in the final stages of preparation by the Committee.

[4] A secondary purpose of the bill is to raise revenue for the District government.

This paper provides background analysis useful to public officials and private parties who are concerned about speculation in housing and/or the government's posture toward it. The purpose of the paper is first, to explain the nature of speculation and related activities in the housing market; and second, to evaluate major features of the proposed tax, by explaining their effects on the housing market and on the welfare of its participants. The paper first explains the nature of speculation, the productive activities of speculators, the competitive nature and operation of the District's housing market, and speculators' profits. Next the paper describes major features of the proposed tax, and then analyzes the effects of the tax on the housing market, welfare, distribution, and Distribution revenues. The final sections summarize findings and recommend a course of action regarding the tax.

MEANING OF SPECULATION

Webster defines speculation as risk-bearing for profit. This definition is too broad for our purposes. In the first place, because our world is uncertain, every individual or organization that owns private property (in the broadest sense) bears risk of loss. That includes everyone, for private property includes human productive potential as well as inanimate assets. For example, individuals who invest in their own specialized education, and others who put their life-savings into the purchase of homes, are bearing risk as surely as are investors in common stock. For public policy purposes, we wish to define speculation as something distinct from the ownership of private property.

In the second place, the economist's model for explaining the behavior of a wide range of individuals and organizations is based square on the postulate that they maximize profits. The demonstrated power of the model in explaining the behavior of individuals and organizations in business suggests that most such entities are motivated by profit. On occasions when the economist resorts to the more general postulate that individuals are utility maximizers, profit is still included as an element in the utility function, and is found helpful in explaining the behavior of entities such as "not-for-profit" organizations and individuals investing in home ownership. For public policy purposes, we wish to define speculation more narrowly than "risk-bearing for profit."

Economists have denominated selected phenomena as particularly speculative, and subjected them to analysis, viz. the purchase, storage, and sale of agricultural commodities and foreign exchange. Following this precedent, we shall define speculation as the purchase, (risk) holding, and sale of goods for profit in the form of capital gain. We correspondingly define the speculator as one who purchases, holds, an dsells the goods. The term "risky" is inserted only to remind us that ownership implies risk of loss as well as expectancy of gain.

For purposes of explaining selected phenomena in the real property market and the effects of the proposed tax, we further narrow the definition of speculator to exclude governments, "not-for-profit" entities, and entities that transfer by gift or at regulated or (specified) low price. We also exclude individuals who transfer their

own residences and entities that transfer after holding for more than a specified period. This definition is more useful than alternatives because it is consistent with common usage and corresponds with the definition of taxable transfers under the proposed tax. Thus, it should minimize confusion and at once facilitate analysis of both market phenomena about which public concern has been expressed, and the effects of the tax.

In commodities and foreign exchange markets the speculative goods are merely stored. The goods, per se, yield no services or income, nor are they improved or transformed. However, in the real estate market, properties often yield consumption or production services during the holding period, as the owner engages in activities distinct from, but associated with speculation.

The "pure" speculator in real property who does nothing except purchase, hold, and sell performs two services valued by the market. First, he inventories the property, bearing the interim costs of capital, maintenance and taxes. Second, he bears the risk of loss from physical destruction (through vandalism, fire, etc.) or from a fall in price. Both present owners who wish to liquidate and future owners who prefer to delay purchase value these services, and would be willing to pay for not having to bear the interim costs and risk.

SPECULATORS' PRODUCTIVE ACTIVITIES

The activities concommitant with speculation in real property are primarily these: [5]

First. Repair, rehabilitation, or new construction.

Second. Rental.

Third. Forecasting, appraisal, and advertising.

Fourth. Assembly of property.

Fifth. Financing the sale of property.

Speculators who engage in additional activities perform additional services valued by the market. Two of these are so obvious that they require no explanation. First is the physical improvement of property, either cosmetic repairs, major rehabilitation, or new construction. Second, is the rental of dwelling units. The value of services provided by speculators engaging in the remaining activities is often overlooked. Therefore these activities merit detailed attention: the assembly of the property, and the provision of capital, and particularly the provision of information.

First, consider a triad of activities that cope with the scarcity of information: forecasting, appraisal, and advertising. Speculators forecast future events affecting the efficient uses of property, and they appraise the value of property in alternative uses. As part of this process, they incur costs to learn present and future sources and terms of financing, the legal intricacies of real estate and tax law, the location and likelihood of private and public improvements, zoning variances, and changes in rent control and construction regulations. Speculators, like brokers, advertise or search for both sellers and buyers. Through

[5] Another activity in which speculators sometimes engage is lobbying for infrastructure or permission to develop. It appears to be unimportant in the context of District market phenomena.

the collection evaluation, and dissemination of information, they produce and distribute new information regarding the availability, alternative uses, and value of property. The information is, of course, valuable to the speculators, as the basis for their exchange and use of property. It is valuable to some others as well, valuable to some of those with whom the speculator trades and to other actual or prospective property owners who observe the prices and uses of properties that result from that information, and who use these observations to base decisions regarding property exchange and use. The production and distribution of information—which is the lifeblood of the market system—thereby channel real property and other resources from lower valuing to higher valuing users, and from lower valued to higher valued uses.

It is sometimes objected that speculators produce and distribute inaccurate information, and consequently induce exchanges and uses of property that would not have occurred had information been perfect. Of course, the comparison between a real world in which information is scarce, and a dream world in which it is not, is both irrelevant and misleading. The statement that speculators sometimes put out inaccurate information is nevertheless true, for two reasons. First, some speculators deliberately misrepresent the facts. The problem of fraud can be solved more directly through legislation and enforcement against fraud in the real property and other markets, than through legislation against speculation.[6]

Second, some speculators make honest forecasts and judgments regarding property uses and values that turn out to be incorrect. This is an inevitable and universal problem implied by the scarcity and cost of information. It hampers not only speculators' attempts at profit and prospective homeowners' management of their life savings, but also government officials' planning. The economic or optimal solution to the problem does not imply the elimination of incorrect forecasts and poor judgment, but minimization of the combined social cost of producing improved information and living with the consequences of the remaining imperfections in it. The solution is obtained by framing institutions that permit the freedom and forster the incentive to assemble, produce, and distribute the "optimal" quality of information. Private property owners (including speculators) operating within the market system, and government agencies, are alternative institutions for generating information. When private property owners in a competitive market purchase or use property on the basis information, and when government officials dispute its accuracy and provide alternative information, we are faced with the question. Who is likely providing the better information? The truth is closer to what people do than it is to what they say. We therefore rely upon the forecasts and appraisal of private parties who have "bet" their wealth on the accuracy of their information through the purchase and use of property. This suggests that the objection to speculators on grounds that they sometimes generate incorrect information is misguided.

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[6] For a discussion of the problem of fraud and economic solutions, see Michael R. Darby and Edi Karni, "Free Competition and the Optimal Amount of Fraud," *Journal of Law and Economics*, Vol. XVI (1), April 1973, pp. 67–88; and Claude S. Colantoni, Otto A. Davis, and Malati Swaminuthan, "Imperfect Consumers and Welfare Comparisons of Policies Concerning Information and Regulations," *Bell Journal of Economics and Management Science*, Vol. 7, Autum 1976.

It is also sometimes objected that middlemen generally, and speculators in particular, perform no valuable service when they purchase and resell. It is said that the original owner could have sold directly to the ultimate purchaser, and avoided passing the property through the middleman who exacts a return by selling at a marked-up price. If this were so, then why did not the original owner and ultimate purchaser directly engage in the exchange, with gains to both? One possible explanation is that the buyer preferred to buy at a time later than the seller preferred to sell. If so, the speculator serves them by bearing the costs and risks of inventorying the property for a time. In light of the scarcity of information regarding the timing of fluctuations in market supply and demand, speculators' willingness to inventory can be seen to spare former and future owners, as well as the speculators themselves, the cost of obtaining such information.

A second possible explanation is that the buyer and seller lacked information regarding the dwelling unit's availability and demand. If so, the speculator serves the original owner by offering him the highest price about which he knows, and afterwards serves the ultimate purchaser by informing him of the unit's availability at a price which makes the unit more attractive than any alternative about which he knows.

The assembly of property is an additional activity in which speculators sometimes engage. Property assembly affords cost reduction—economies of scale—in rehabilitation and new construction. It also enables the owner to capture some of the otherwise external (neighborhood) benefits from property improvement. In other words, the consolidation of fragmented ownership erases some of the negative externalities that inhibit the efficient use of real property in slums. Property assembly also affords scale economies in the collection, evaluation, and dissemination of information.[7] In a competitive market the reductions in cost and elimination of some negative externalities yield reduced prices of assembled property to improvers, and ultimately reduced prices of improved and advertised property to consumers of it.[8]

The speculator who invests in rehabilitation or new construction obviously brings capital to the housing market. The speculator also sometimes contributes to the mortgage market's provision of capital to facilitate the sale of his property. The conventional lending institutions, such as savings and loan companies, and commercial banks, are often either unwilling or (because constrained by government regulation) unable to finance the purchase of property in "red-lined" neighborhoods, or by households with low income, or by households that will not make a minimal downpayment. In the event that prospective purchasers of speculatively-held property are unable to obtain preferred (or any) loan terms from the conventional sources, the speculator's willingness to temporarily finance that purchase must be judged a service worth the cost to the purchaser. The speculator, as a buyer of property, sometimes indirectly improves sellers' access to

[7] There is still another purpose of assembly. In a market where there is racial prejudice, ownership of neighboring properties enables one to contol, to some extent, the racial characteristics of owners or renters, thereby enhancing the value of the assembled properties.

[8] It can be argued that the assembly of property in sufficient quantity leads to the destruction of a competitive market. We hasten to add that property ownership in the District of Columbia remains highly fragmented, so this argument can be dismissed.

other capital sources, particularly when the seller is moving from one house to another. The speculator's willingness to purchase helps the seller to a liquidity position instrumental in financing the new house purchase. In sum, the speculator increases the availability and reduces the cost of mortgage capital, especially in areas and for groups not well served by conventional institutions.[9]

COMPETITION AND SPECULATORS' PROFITS

It is sometimes erroneously thought that in the process of buying and selling, the speculator generally increases the price of housing, taking the markup as a profit. The error of this notion probably derives from the failure to recognize one or more of the following points:

One. The speculator's sale price does not always exceed his purchase price.

Two. The speculator generally provides one or more services, some of which are intangible, and therefore easily overlooked.

Three. The provision of services implies speculator cost, thereby invalidating the presumed equivalence of markup with profit.

Four. A competitive market imposes severe constraints on prices at which the speculator can buy and sell, and thence on the profits he makes.[10] We now elaborate on the latter point.

The District housing market can be described as competitive in two important ways. First, buyers and sellers are numerous and independent. The sales and purchases of each individual participant are small in relation to the aggregate volume of transfers. There is no evidence that either buyers or sellers collude, and there are several reasons to believe they do not.[11] Second, although government has hampered the movement of productive resources among alternative uses through zoning, credit restrictions, and rent controls, land, capital, and labor remain mobile to a very great extent. In view of this, we use the competitive model to explain housing prices and speculators' profits.[12]

According to the competitive model, speculators must, on the average—over all locations and time periods—make an annual rate of return comparable to that normally earned in other markets of comparable risk. This follows from the mobility of resources. If the

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[9] The meaning and value of liquidity in markets generally are clarified in H. L. Miller, "On 'Liquidity' and 'Transactions Costs' ", *Southern Economic Journal,* Vol. XXXII, No. 1, Pt. 1, July, 1965, pp. 43–48.

[10] The findings of "Facts About Real Estate Transactions" should be viewed in the light of the four points. (1) The paper reports sales prices far in excess of purchase prices in five neighborhoods during the period 1972–74. The locations and time period were selected precisely because they were expected to yield high observed mark-ups. We should remember that at some other locations and time periods prices have surely fallen, especially if adjusted for inflation. (2) The paper makes no mention of the speculator's provision of information, risk-bearing, and purchase money. (3) The paper underestimates speculators' costs of physical improvement (because the failure of some speculators to obtain building permits is mistakenly interpreted to mean that they made no improvements, and because permit valuations are mistakenly interpreted as unbiased estimates of improvements costs.) The paper ignores all other costs: brokerage, financing, taxes, etc. If these costs were subtracted from the mark-up, profits reported for the five neighbohoods would be greatly reduced, and some of the speculators would show sizable losses. (4) The paper does not attempt to reconcile the reported annual rates of return of 67–155 percent with the competitive structure of the market, which tends to eliminate higher-than-normal profits.

[11] The reasons are explained in Armen Alchian and William Allen, *Exchange and Production: Competition, Coordination, and Control,* 2d ed., Wadsworth, 1977, pp. 320, 321.

[12] The competitive model and its relationship to other models, including those of perfect competition and monopolistic competition are explained in George J. Stigler, *The Organization of Industry,* Irwin, 1968, pp. 5–22.

return in a particular housing market activity or location is higher than normal, then speculators will channel resources from less profitable uses into that activity or location. The influx of competing resources will reduce the return toward the normal rate. Conversely, if the return in a particular housing market activity or location is lower than normal, then speculators will channel resources from that activity or location into more profitable uses. The exit of resources will increase the return of remaining ones toward the normal rate. Of course, it takes time in a changing market for the owners of resources to learn which activities and locations are more or less profitable, for they must search for information on bids and offers. For a time, then, profits can be larger or smaller than normal. But the tendency is always towards the normal rate of return, so that, on the average, speculators make no more and no less than do investors in other industries of comparable risk.[13]

II. Transaction Excise Tax

FEATURES OF THE TAX

We shall analyze salient features of the 1976 and 1977 versions of the transaction excise tax. The primary difference between the two versions is that the earlier one would tax gains attributable to rehabilitation,[14] whereas the later one would exempt such gains. The primary purpose of the tax is to protect the welfare of current District tenants in neighborhoods where constraints on their housing choices have been increasing. More specifically, it is to curb eviction, and rising rents and prices of housing. The District Council explicitly states the following purposes,[15] intended to ease the increasing constraints: to deter price increases, to stabilize neighborhood populations, and to discourage speculative profits. A fourth implicit purpose of the 1976 (but not 1977) version must be to curb speculative rehabilitation. That is understandable in view of the likelihood that it leads either to eviction or increased rent and price for the improved dwelling. Another explicit purpose is to raise revenues.

The levy is labled an excise tax, and the Internal Revenue Service has classified it as such. However, from the economist's point of view, it is actually a special capital gains tax. Excises are levies imposed at transfer upon particular goods or services, at either specific or ad valorem rates. The revenues collected at transfer from a specific excise on residential real estate would be so many dollars per unit size of the property and/or units of other physical attributes. Alternatively, the revenues collected at transfer from an ad valorem excise on real estate would be a percentage of the price. In contrast with these excises, the proposed tax is a percentage of the gain from holding real estate where

[13] The risk of loss associated with speculation varies greatly, depending upon the type, location and timing of activities in which the speculator engages. We cannot and, for our expositional purposes, need not specify "the" normal (before taxes) rate of return in other industries of comparable risk. For some speculators it may be as low as 8 percent; for others it may be as high as 40 percent. But surely the annual rates of return of 67–155 percent reported in *Facts About Real Estate Speculation* are in excess of what is normal.

[14] According to 1976 version, Sec. 104, a property has been rehabilitated if the speculator expends either $10,000 or 15 percent of the price at which he sells the property improving the property.

[15] See 1976 version, pp. 0–5.

gain is defined as the sale price minus the sum of all acquisition, rehabilitation, and transfer expenses. This definition of gain is essentially the same as (though more specific than) that used by the Internal Revenue Service for capital gains taxation. Accordingly, we shall hereafter refer to the proposed levy as a special residential real estate capital gains tax, or for short, the gains tax.

Special capital gains taxes on real estate, similar in some respects to the District proposal, have been used in several countries. In the United States, Vermont alone has used the tax, although several other states have considered it. Essentially all of these statutes and proposals have the purpose of controlling speculation and related activities and/or raising revenue.[16]

The occasion precipitating the District gains tax is the transfer of residential property. This feature contrasts the proposed tax with the real property tax and other real estate taxes which are levied on a regular periodic basis, in the absence of a realized gain, and regardless of the property's use designation. The party liable for payment is the seller, and he must pay within 45 days of transfer. The most notable of many complete or partial exemptions are transfers by owner occupants, (who, by our definition, are not speculators) transfers to qualified tenants, transfers of property below a specified price level, some transfers of new construction, and in the 1977 version, transfers following rehabilitation. If we refer to a basic tax as one that taxes gains at a constant rate, then we can describe the tax's allowance of reduced rates for increased holding periods as a partial exemption, with total exemption after three years.

To compute the amount of the tax, one must first compute the basis, which is the sum of acquisition, rehabilitation, and transfer costs. Then compute the gain, which is sale price minus basis, and the gain as a percentage of the basis. Next find the tax rate from an appropriate table that expresses the rate as a function of the percentage gain and the holding period. Finally, multiply the tax rate times the gain to obtain the tax.[17]

The 1976 version has two tax rate tables.[18] Table I is applicable to gains when there is no rehabilitation. Table II is applicable when there is rehabilitation. The latter table contains lower rates over most ranges of percent gain and holding period. The tax rate structure is nominally progressive, so that the percentage of the gain that is taxed is an increasing function of the amount gained. The progressivity of the

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[16] The only comprehensive discussion of these taxes is to be found in M. Glickfield & D. Hagman, *Special Capital and Real Estate Windfalls Taxes*, in Windfalls for Wipeouts: Land Value Gains and Losses from Planning and a Catalog of Methods for Redistributing Them (D. Hagman and D. Misczynski, eds., forthcoming 1977) to be published by the American Society of Planning Officials. This work includes a summary comparison of taxes introduced in the legislatures of Montana, Oregon, Virginia, Washington, and California and enacted in Vermont, Ontario, Great Britain, Alberta, New South Wales, and New Zealand.

[17] A simple example illustrates the computation of the District tax, and its effect on gains. Suppose an investor purchases a house for $20,000, spends $3,000 on minor improvements and an additional $1,000 for services associated with acquisition, holding, and sale of the property, and in eight months sells the improved property for $30,000. His before taxes percentage gain is 25 percent. The Table I tax rate applied to the gain of $6,000 is 61 percent. The speculator's District tax is therefore (6000)(.61)=$3660. The speculator must also pay federal taxes. The Internal Revenue Service does not allow deduction of the District tax. If the speculator is in the 30 percent federal income bracket, his federal tax is (6000)(.30)=$1800. The combined District/federal tax is, therefore, $5460, and the speculator's after-taxes return is 6000—5460=$540.

[18] Op. cit. 9, 10.

rate structure should not be interpreted as a feature necessarily consistent with the ability to pay equity principle, because the gains to which the rate structure is applied comprise but a part of sellers' income, as a general rule. Long-term gains are taxed at a lower effective rate than short-term gains; the rates decrease over 11 steps up to 36 months, when gains become exempt.

EFFECTS OF THE TAX ON SPECULATION AND PRODUCTION

We shall now set forth a model of investors' choice, and use it to explain the effects of a tax on their speculative activities and transfers. The purpose of the model is not to describe the real estate market and real investor behavior in all their complexity. Nor is it necessary that real investors base decisions on perfect knowledge and precise calculations. On the contrary, the purpose of the model is to explain the essentials of real investor behavior. For most essentials, that purpose is served by abstracting from market detail and modelling investors who behave as if knowledge were perfect and calculations precise. At first, we shall explain the effects of a tax allowing no exemptions. Then, we modify our conclusions to allow for several exemptions.

An investor is one who commits his own capital, land, or labor to a program in quest of profit. He chooses among numerous alternative investment programs. Some of them involve real property speculation in the District. Others are business ventures, purchases of common stock, et cetera. Each real property speculation program specifies a particular property, time of purchase, and time of sale. It also specifies the activities to be coordinated with the speculation, including the inputs and outputs of each activity. For each program, there is a probability distribution of possible profit and loss outcomes. The anticipated outcome is not single-valued but probabilistic because extraneous events affecting the costs of inputs, corresponding outputs, and the sale price cannot be foreseen with certainty. Each distribution has an expected return and a risk of loss.[19] The expected return is the sum of all possible outcomes, each weighted (that is, multiplied) by its probability. The risk of loss is the sum of all loss outcomes, each weighted by its probability.

In our model, the investor is desirous of profits, but averse to risk of loss. He chooses the program with the preferred combination of expected return and risk. At any given time, the set of programs in which investors are engaged is comprised of those having expected returns sufficiently high to induce them to bear the risk and forsake alternative programs. Real properties excluded from the set are those which do not have sufficiently high expected returns.

The imposition of a tax reduces the amplitude (percentage gain net of tax) of the upper end of the probability distribution associated with each taxable program. Because there is no loss offset provision in the proposed tax, it reduces the expected return without affecting the risk.

[19] Examples of extraneous events contributing to loss include vandalism; tenants' damages; debtor default on purchase-money mortgage; changes in rent controls, income tax laws, interest rates, and prices of rehabilitation materials and labor; and unproductive search for a buyer willing to pay a price high enough to cover costs.

It thereby alters the preference ordering of alternative programs, pushing some real property speculation programs into the excluded set, and allocating investors' capital, land and labor away from speculation and related activities in real property.

Now consider the effects of exempting gains when the speculator engages in a specified activity or in a transfer with specified characteristics. The exemption always tends to increase the amount of the specified activity or transfer. It also tends to increase complementary activities. The following exemptions illustrate.

The exemption of transfers of newly constructed and rehabilitated property [20] will induce some new construction and rehabilitation that would otherwise not occur. It will also induce additional assembly, because assembly is a precondition for economic construction or rehabilitation on some properties. On the other hand, new construction or rehabilitation is a substitute for repair of some properties. On these properties, the exemption will tend to discourage speculative repair and speculative trading without improvement. The extent to which exemption of transfers following rehabilitation or new construction is effective depends upon (1) the substitutability of either of these activities for taxable trading without improvement and (2) the speculators' cost of tax avoidance through integration of assembly, information, rental and/or financing activities under single ownership. If in the absence of a tax, speculation by separate specialists in each complementary activity is not prevalent in the industry, then imposition of a tax allowing exemption of transfers following rehabilitation and new construction could conceivably induce more of these two activities than would have occurred in the absence of the tax. It is also possible that the tax allowing these exemptions would induce less of these two activities than would have occurred in the absence of the tax.

Consider the exemption of property held for longer periods of time. Initially, as a point of reference, imagine a tax proportional to gain, regardless of holding period. Now allow the proportion to diminish: that is, allow an effective partial exemption as the holding period lengthens, until exemption is total after holding x years.[21] The exemption tends to increase all otherwise taxable speculative activities and transfers. If rehabilitation does not exempt the gains, then the holding period exemption tends to increase rehabilitation. If speculative trading, including concommitant activities such as the provision of information, are taxable, then the holding period exemption tends to increase trading and the provision of information. If, in the absence of a tax, speculators' optional holding period [22] is less than x years, the exemption will encourage longer holding periods, and speculators owning habitable structures will more often act as landlords renting to tenants prior to transfer.

The further exemption of transfers of property below a specified price [23] tends to induce some tranfers at prices lower than would

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[20] Section 403(q) of the 1976 version exempts new construction.

[21] Section 403(p) and table I of the 1976 version specify this exemption: $x=3$.

[22] *Facts About Real Estate Speculation* reports a sample mean holding period of 6.3 months.

[23] Sections 403 (c), (d), (g) and (n) of the 1976 version specify exemptions of this type.

otherwise occur. The extent of this effect depends upon the price specified, and its relationship to speculators' outlays. Finally, the exemption of transfers to tenants with specified characteristics [24] may induce some transfers particularly where optional property use does not require rehabilitation or new construction. Because the provision of information and mortgage financing are complementary to the exemption-induced speculation, these, too, will tend to increase.

The extent to which any version of the tax will discourage speculation and related production is unknown.[25] When a tax discourages speculators from engaging in some activities, some of the abandoned activities may be taken up by nonspeculators. Some actual or prospective homeowners and landlords would do additional forecasting, appraising, and searching for buyers or sellers, on their own. Some additional property owners would physically improve their properties and inventory or rent them until sale. Others would hire the services of specialists—realty managers, consultants, appraisers, brokers, carpenters, and contractors. Some of these services would surely be provided on a fee basis by former speculators. However, we can be certain that the market will perform all of the services to a lesser extent if speculation is discouraged, for several reasons.

First, most homeowners and landlords would not perform most services for themselves, because they can hire specialists to perform them at lower opportunity cost. However, even if property owners were to hire information and contracting services, they would still have to bear the risk that the gain in property market value would be less than the cost of research, promotion inventorying and/or physical improvement. The discouragement of speculation is the discouragement of specialists in bearing the risk associated with these activities. Non-speculators are less willing to bear the risk, and it is not economic for them to purchase complete insurance.

Second, property assembly through homeowners' or landlords' formation of cooperatives, partnerships or corporations would probably be too costly or risky for most. If assembly is not economic, then neither is some of the promotion and improvement of property that hinge on assembly-afforded scale economies and internalization of external benefits. Thus, if speculation were discouraged, the resulting reduction in property assembly implies a reduction in assembly-dependent activities. Finally, if speculation were discouraged, less capital would be provided for financing some activities. Rehabilitation and new construction, and the supply of purchase-money mortgages, would be reduced.

EFFECTS OF THE TAX ON THE HOUSING MARKET

We shall now explain the effects of the tax on the cost of housing to consumers, the quantity and quality of housing provided for their

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[24] Section 403(a) of the 1976 version exempts transfers to tenants of one year or more. Section 403(b) exempts transfers to tenants organized as a cooperative.

[25] For informed judgments regarding the extent of effects of similar taxes in Vermont and Ontario, see R. Lisle Baker, "Controlling Land Uses and Prices by Using Special Gain Taxation To Intervene In the Land Market: The Vermont Experiment," *Environmental Affairs*, Vol. IV, No. 3, Summer 1975, pp. 448–449; and Laurence B. Smith, "The Ontario Land Speculation: An Analysis of an Unearned Increment Land Tax," *Land Economics*, Vol. 52, No. 1, February, 1976, pp. 2, 10. Smith argues that the Ontario tax, when combined with the federal tax, is "prohibitively high," and "will eliminate most taxable transactions."

consumption, and other housing market parameters. We begin with a tax that allows no exemptions and then introduce selected exemptions. We shall first explain some effects in "speculative" neighborhoods, that is neighborhoods where speculation would pervade in the absence of a tax. Then we shall explain long run tendencies in other neighborhoods of the tax jurisdiction.

The immediate effect of a largely unanticipated tax in a speculative neighborhood depends upon the response of both potential investors and current investors. The latter group is comprised of those who own at the time of enactment. If there are no exemptions, both groups' demand is reduced, and price falls. However, if the tax allows exemption for a longer holding period, the demand of current investors (to hold previously acquired property) may temporarily increase, so the net immediate effect of the tax on price is indeterminate. If the tax is largely anticipated, price will fall prior to enactment, and post-tax inventory and price adjustments will be smaller.[26]

Following owners' initial adjustments, prices of property of any given quality will be lower. These lower prices are attributable to the reduction of speculators' demand, and to the discouragement of speculative assembly, advertising, and financing, all of which would enhance the market value of serviced properties without improving their quality. There will be some qualitative effects, too. "Quality" refers to the physical attributes of a property, including neighborhood attribntes. Fewer dwellings will be repaired or rehabilitated, so the quality of some structures will be lower. More structures will deteriorate into uninhabitable status. Fewer will be razed, and there will be fewer new structures. The reduction in quality of some structures yields negative externalities that reduce the quality of neighboring properties, as well. If property tax assessments remain proportional to market values, assessments and property tax liabilities will be lower. There will be fewer property transfers, fewer tenant evictions, and fewer new occupants. Finally, there will be fewer changes in tenancy status, race, and income of occupants; if there are established tendencies for speculative neighborhoods to convert from rental to owner-occupancy, from black to white, or from low income to moderate income, the tax will slow those tendencies.

As time passes, an increasing number of speculative neighborhoods will experience the above-described effects of the tax. Clearly, the tax jurisdiction's housing stock will be altered. The (larger) market's stock is also altered (to a lesser extent), so prices and rents will start to change in jurisdiction non-speculative neighborhoods. The quantity of moderate-grade dwellings in the market will diminish, and their price and rent [27] in these neighborhoods will tend to increase. The quantity of low-grade dwellings in the market will be augmented by down-filtering; [28] at the same time, some of the lowest-grade dwellings will

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[26] Empirical evidence on the extent of immediate effects of similar taxes in Vermont and Ontario are presented in Baker, op. cit., p. 449, and Smith, op. cit., pp. 6, 7, respectively. The observed decreases in number of listings, transfers, and prices tell us nothing about the post-adjustment and long run effects of the law.

[27] Rents of some District dwellings are controlled. The rising response of uncontrolled rents of the shrinking stock is surer and more apparent; but controlled rents will also tend to rise through landlords' adaptation, if not through the political process.

[28] Ira Lowery, "Filtering and Housing Standards: A Conceptual Analysis," *Land Economics*, Vol. XXXVI, No. 4, November 1960, pp. 362–370.

become uninhabitable. The net effect on the quantity, price, and rent of low-grade dwellings in these neighborhoods is, for a time, indeterminate. Ultimately the quantity will decrease and price and rent tend to increase, because of the decreasing rate at which the low-grade stock will be replenished by down-filtering.

Even if the tax substantially reduces property improvement in speculative neighborhoods, the tax-induced tendencies in jurisdiction nonspeculative neighborhoods will plausibly be negligible. The smaller the amount of speculative property improvement in the absence of the tax, the larger the housing market, and the greater the extent to which speculators deterred from improvement within the jurisdiction direct their resources into the same housing market outside the jurisdiction, the more plausible it becomes to reckon the effects of the tax are distant, diffused, and negligible in nonspeculative neighborhoods.[29]

The exemption of transfers following rehabilitation and new construction increases speculators' demand and the exempted and complementary activities; and it decreases substitute activities.[30] In improvement-prone neighborhoods, and ultimately in other neighborhoods of the tax jurisdiction, the exemption tends to reverse essentially all the previously described effects of the tax on quantity and quality of dwellings, their prices, rents and property tax assessments, and occupant characteristics.[31]

The other exemptions previously discussed—transfers at low prices, to select tenants, or after longer holding—tend to reverse most of the effects of the tax (with no exemptions). In speculative neighborhoods, these exemptions generally tend to increase the quantity and quality of dwellings, prices and property assessments, transfers without improvement, and attendant changes in occupancy.[32]

EFFECTS OF THE TAX ON WELFARE DISTRIBUTION

We shall first explain the welfare implications for the two parties to speculative transactions; the speculators and the property owners from whom they purchase or to whom they sell. Later we shall treat the welfare implications for "third parties." The fundamental postulate that people act to maximize their own welfare implies the truism that when they engage in exchange, both parties to the transaction are

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[29] In the District, according to *Facts About Real Estate Speculation*, these were 899 doubly-transacted properties in the two years 1972–74. Evidence is lacking as to how many of these properties were rehabilitated or newly constructed. To obtain an idea of the possible effect of speculative improvement on the housing stock in the District and in the Washington SMSA, let us assume that 450 dwellings are speculatively improved each year. Then if the tax eliminated all 450, if non-speculators performed none of these improvements in the absence of speculators, and if speculators did not divert any of their resources to extra-jurisdiction locations within the SMSA, then after 20 years there would be 9000 fewer rehabilitated or newly constructed dwellings because of the tax. To view that in perspective, we compare it with the approximately 280,000 dwelling units of all types in the District.

[30] We previously acknowledged the possibility that, relative to no tax, a tax exempting transfers following rehabilitation and new construction could increase these two activities. If it did, it would be with the following results in improvement-prone neighborhoods: increased quantity, quality, price (of a given quality) and property tax assessments, and attendant changes in occupants and occupant characteristics.

[31] The exceptions are: fewer dwellings will be traded without improvements, and fewer will be repaired; the effect of the exemption on the number of dwellings that deteriorate into uninhabitable status is indeterminate.

[32] There are two exceptions. First, the exemption of transfers at low prices will cause some prices and property assessments to be lower. Second, the exemption of transfers to some tenants will tend to slow occupancy changes.

made better off. Whether a homeowner sells to a speculator or buys from him, he gains more than he gives up, or he would not have sold or bought.

The problems with all actions—and especially (risky) speculative exchange—is that the parties act on the basis of incomplete information, and that expectations are often unfulfilled. Although at the time of a transaction both parties' welfare is increased, the subsequent availability of more complete information (perhaps after unforeseen events have transpired) often leads one of the parties to rue the transaction or the terms to which he agreed. Had he possessed the additional information or foreseen the future more clearly, he would not have sold or bought at that price, and his welfare would now be greater. While it is unfortunate that information (like all other goods) is scarce, it is also obvious to both parties about to transact that the costs of obtaining more information at some point outweighs the value. The problem of uncertainty pervades the housing market. Speculators do not create the problem, but through their forecasting, appraisal, and advertising, generate and distribute information that reduces the problem.

It is sometimes argued that speculators' expectations are more often fulfilled than are the expectations of those with whom they transact, because speculators have market information and homeowners do not. This is supposed to be particularly true when speculators deal with the uneducated and uncalculating. It is thought that speculators systematically reduce the welfare of such people by buying property for less, or selling for more, than it is worth. The argument is incorrect.

Before exposing the error of the argument, we should acknowledge that in particular instances, though not generally, speculators (1) have more complete information than those with whom they deal, and (2) "flip" houses for an above-normal profit, that is, purchase and immediately resell at a substantially higher price. However, in a market with many competing speculators, the ability of a speculator to "flip" for a profit above the normal competitive level does not depend upon the difference between his information and that of the parties with whom he transacts. It depends, instead, upon the difference between his information and that of speculators who make competing bids or offers. This difference is economically restricted by the competitive market. From our analytic standpoint, information is an ordinary scarce good. There is no more efficient way of producing information or coping with uncertainty than the competitive market. On the average, it yields speculators a normal competitive profit. Speculators who consistently do better than this are not typical.

Another example involving the speculator and the party to whom he sells is often the subject of lament. The speculator finances another's purchase of his dwelling via a land contract. After a time the purchaser defaults, the speculator reposses the property, and sells to a new buyer. Nevertheless, at the time of a transaction, both parties gain welfare. At the time of default and repossession, when both parties have perfect hindsight, one or both may realize that the transaction made them worse off. Some label the speculator's activity "exploitation", because the speculator is presumed to systematically profit from

the purchaser's predictable loss. The label is misleading and the presumption incorrect.

Although speculators sometimes make above-normal profits when lendees default, such profits are not predictable, except probabilistically; at other times speculators make losses, especially when the property has been damaged. Many low or discontinuous income households have defaulted, and some have lost equity. But the defaults were not predictable, the defaulting parties may have had no equity at the time of repossession, and they may be better off for the original purchase. That is, of course, not to say that such people are as well off as public officials think they should be. The scenario of purchase, default, and repossession is most deplored by officials dedicated to encouraging homeownership. The important point is that speculators do not cause any demise of defaulters. Rather, they provide them with the opportunity to own their own homes, when the conventional lending institutions will not bear the high risk.

Let us now set aside further consideration of the welfare of parties to the speculative transactions, and turn to the effects on third parties' welfare. The welfare effects of the tax (with no exemptions) on third parties follow from the previously discussed effects on speculative activities, and on prices and other parameters of the housing market. The major effects are (1) to increase the welfare of current tenants in speculative neighborhoods, (2) to decrease the welfare of most property owners in those neighborhoods, and (3) to decrease the employment, income, and welfare of speculators and those whose services they would hire. Other effects on the welfare of tenants and some property owners in other neighborhoods of the tax jurisdiction, as well as in the remainder of the market outside the jurisdiction, are distant and diffused. The following discussion is offered in support of these asserted third party effects.

The welfare of current tenants in speculative neighborhoods is vulnerable for several reasons. If speculators evict tenants, or induce landlords to evict them, tenants will lose consumers' surplus, which is the maximum amount of money they would be willing to pay to continue occupancy at the current rent. This surplus is attributable to the cost of relocation, as well as to the difference between current and next-best available quality-rent combinations. If tenants are evicted from rent-controlled dwellings, that difference will be especially high. Even when speculation does not induce eviction and when tenants live in uncontrolled dwellings, they lose surplus because of speculation-induced changes in the quality of those dwellings.[33] The market-determined rent will correspondingly change at lease renewal, leaving the tenant with a rent-quality combination less preferred than the pre-speculation combination that he chose. Because these are the effects of speculation on current tenants in speculative neighborhoods, it is clear that the tax increases their welfare. The exemption of construction and rehabilitation tend to reverse the effects of the tax. So does the exemption for longer holding. On the other hand, some current tenants, as potential homeowners, will tend to gain welfare from the exemption of transfers at low price and to those tenants.

[33] Recall that a dwelling's quality can increase or decrease as a result of changes in the physical attributes of either that dwelling or neighborhood dwellings.

Property owners in speculative neighborhoods are either landlords or homeowners. Landlords' welfare (like that of the investors we previously modelled) is a function of their property value. Because speculation increases property value relative to property value elsewhere and goods generally, it increases their welfare. Therefore the tax reduces landlords' welfare. In matters relating to their property, homeowners' welfare increases with relative property value, decreases with property tax liability, and either increases or decreases with changes in neighborhood characteristics that affect the utility they derive from consumption of housing services. From this it can be shown that the effect of speculation, and the effect of the tax, are theoretically indeterminate.[34] The little evidence we have suggests that most homeowners in speculative neighborhoods gain welfare, so the tax would cause them welfare losses.[35]

The tax will decrease the employment, income, and welfare of speculators and those whose services they would hire. Some speculators and their employees will remain active in the tax jurisdiction, though to a lesser extent; other speculators and their employees will become active in the housing market outside the jurisdiction; still other speculators will, as nonspeculators, continue performing some services in the jurisdiction. Finally, some of the affected people will find employment in alternative (nonhousing) markets. Nevertheless, some entrepreneurs and employees, and the owners of inanimate resources in construction, real estate, lending, advertising, and legal services will be detrimentally affected.

In nonspeculative neighborhoods, homeowners tend to experience an increase in property value, property tax, and opportunity cost (imputed rent) of housing service. The effect on homeowners' welfare is theoretically indeterminate. Landlords tend to gain welfare because of increased property values, and the tenants, as continuing tenants, tend to lose welfare because of increased rents. However, it is not clear whether tenants, as potential homeowners, gain or lose welfare; because of the tax, they have opportunities (1) to buy in speculation-prone neighborhoods at lower prices but with fewer opportunities to finance their purchase, and (2) to buy in other neighborhoods at higher prices. Exemption of transfers following construction and rehabilitation tends to reverse all these effects that operate through

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[34] We assume that changes in market value and property tax liability are proportional and simultaneous. This is but an approximation of reality. Dick Netzer describes cases where the percent increase in tax liability exceeded the percent increase in market value. (See *The Economics of the Property Tax*, Washington, D.C.: Brookings, 1966.) We treat property value (i.e., wealth) and the tax liability (or alternatively, liquidity) as distinct elements in the homeowner's welfare (i.e., utility) function because homeownership confers a consumers surplus. This treatment enables us to acknowledge the first of two ways in which speculation could conceivably induce a homeowner's welfare loss. First, an increased tax liability could cause the homeowner a liquidity problem, and "force" him to sell, i.e. realize the wealth increment; and that increment's contribution to the homeowner's welfare could conceivably be less than his loss of consumer's surplus from sale. Second, a homeowner's subjective value of his property can diminish in response to neighborhood changes at the same time that the market value of his property increases. So long as his subjective value exceeds the market value, the net effect of these changes can be to reduce his welfare.

[35] If Alexandria, Va. homeowners' 1976 vote against a plan to curb speculation is any indication of District homeowners' preferences, then it can be argued that the tax reduces the welfare of most homeowners in speculative neighborhoods. The plan is described in Hammer, Siler, George Associates, *Final NEA Study Report* to the City of Alexandria, Virginia, Washington, D.C., March 26, 1976, Margarita Suarez, Hopkins House Association, Alexandria, provided the results of the survey of property owners. Among owner-occupants the vote was 31 in favor and 79 against the plan; among absentee owners, the vote was 18 in favor and 122 against.

altering the jurisdiction's housing stock. The additional expenses of transfers at low prices and transfers to specified tenants increases the likelihood that tenants, as potential homeowners, gain welfare. Of course, all the effects of the tax in nonspeculative neighborhoods occur slowly over many years, and are diffused through many properties, so they will not be so readily apparent as affects in speculative neighborhoods.

The tax will have additional effects on the welfare of jurisdiction residents through its impact on the jurisdiction's fiscal position; both revenues and expenditures. On the revenue side, reduced property taxes in speculative neighborhoods suggest lower revenues from this source. The reduced price and rent of dwellings in these neighborhoods suggests an increased proportion of low-income households in the jurisdiction.[36] This implies lower income tax and retail sales tax revenues. On the expenditure side, if a higher proportion of low-income households increases the need for welfare assistance, social services, or crime control, the jurisdiction's per capita expenditures, and possibly tax rates, will have to be increased to maintain public service standards. The incidence of welfare effects among service recipients will vary with respect to household income, property ownership, and geographical location.

One additional group of jurisdiction residents will suffer reduced welfare from the tax. These are the commuters to jobs in the city center. Each workday they drive, park, or shop in sections of the city are unsightly. They value the improvements made to property, and will lose welfare from a tax that deters the improvements.

EFFECTS OF THE TAX ON DISTRICT REVENUES

We shall obtain a rough idea of gains tax revenues in the District by computing two upper bound estimates from sample data. One estimate is for the 1976 version, which taxes transfers following rehabiltation at lower rates. The other estimate is for the 1977 version, which exempts transfers following rehabilitation. The estimates are upper bound in the sense that (1) they neglect exemptions, except for the cited special treatment of rehabilitation, and the reduced tax rates at longer holding periods; and (2) they assume that investors will continue to speculate, and engage in related activities in jurisdiction housing, with taxable gains in the future the same as during 1972–74.

The data base for computing the estimates is comprised of the following information on 18 properties: speculators' dates and prices of acquisition and sale, and their costs of transfer and improvement, if any. Fifty-seven properties, with dates and prices, were randomly sampled from all properties sold two or more times in the 2-year period following October, 1972, in neighborhoods 9, 15, 40, and 42.[37] Then

[36] Frank deLeeuw reports an income elasticity of demand for rental housing in the range of 0.8 to 1.0; he reports a somewhat higher range for owner-occupied housing. (See "The Demand for Housing: A Review of Cross-Section Evidence," *Review of Economics and Statistics*, (1971), pp. 1–10.

[37] These four neighborhoods contained one-fourth of the District's properties sold two or more times during the two-year period. The statistical population of speculative transfers in these neighborhoods is not necessarily representative of the larger District statistical population, but we must proceed as if it is until additional data become available.

a survey of the 57 properties was conducted to obtain transfer and improvement cost information. The first 18 usable responses provide the basis for our estimates.[38]

We compute the tax for each of the 18 properties in accord with instructions of the 1976 version. These taxes have a mean of $468.39 and a standard deviation of $1,122.20. If the taxes are considered to be a random sample drawn from a statistical population of District taxes, then we can infer, with 95 percent confidence, that the population mean tax is less than $928.64.[39] In the District as a whole, there were 928 properties sold two or more times during the 2 year period, or 464 properties per year.[40] Therefore, expected annual District tax revenues are (464) (468.39=$217.333; and revenues would almost certainly not exceed (464) (928.64) =$430,889.

The taxes under the 1977 version have a mean of $341.56 and a standard deviation of $1,109.90. We infer, with 95-percent confidence, that the population mean tax is less than $797. Therefore, expected annual District tax revenues are (646) (342) =$159,484; and revenues would almost certainly not exceed (464) (797) =$369,808.[41]

We retiterate that the expected annual District revenues of $217,333 under the 1976 version, and $158,848 under the 1977 version, are upper bound estimates. The estimates do not allow for more exemptions in the computation of sample taxes, nor do they account for speculators' efforts to avoid taxation by either not speculating, or by speculating and qualifying for partial or complete exemption, as for example, by delaying transfer. We also emphasize that the estimates are based upon the assumption that housing and capital market conditions, including the effects of District and Federal Government policies on them remain the same in the future as they were in 1972–74. Changes in District rent controls or housing code enforcement, or changes in Federal monetary policy or income tax laws could markedly alter these market conditions, and thence gains tax revenues. Finally, we remind the reader that the data upon which the estimates are based are a random sample from a subset of the statistical population, and we cannot vouch for its representativeness.

Any gains tax revenues collected must be weighed against losses of the three major local sources of revenue, and costs of administering the gains tax. Property tax revenue losses would result from a gains tax-forestalled increased in market and assessed values of property. Income-tax revenue losses would result from reduced income to stationary District residents, speculators and those in real estate, mortgage finance, advertising, et cetera whose services they hire, and possibly from gains tax-forestalled outmigration of low-income households and gains tax-forestalled inmigration of moderate income households. Retail sales tax revenue losses would also result from the reduced spending of stationary District residents, and from any changes in District per capita income associated with migration.

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[38] The information is taken from Homer Hoyt Institute, *An Evaluation of the Study Called "Facts About Real Estate Speculation"*, (Washington, D.C.: December 15, 1975).

[39] We employ the standard T-distribution. Note that the statistical population of taxes is undoubtedly skewed, and that application of the T-statistic is ideal only when the population is normal.

[40] *Facts About Real Estate Speculation*, op. cit., p. 3.

[41] Special capital gains taxes on real estate have not distinguished themselves as generators of large amounts of revenue in other jurisdictions either. See Smith, op. cit., p. 11; Baker, op. cit., 450; and Hagman, op. cit., table 1.

The estimation of gains tax effects on property, income, and sales tax revenues is beyond the scope of this paper. However, we should note two points regarding their relative magnitude. First, gains tax revenues are collected once only (on the event of a property's second sale), whereas property, income, and sales tax revenues are collected repeatedly. Thus, the cumulative effects of property tax losses, and possible migration-associated income and sales tax losses, over many years must be weighed against once only gains tax revenues for each year. Second, the 1976 version of the gains tax would cause greater losses of property, income, and sales tax revenues than the 1977 version. There are three reasons for this. First, the higher 1976 version taxes imply lower incomes of stationary District residents, reducing their income taxes and their expenditures taxable under the sales tax. Second, the 1976 version's discouragement of rehabilitation implies lower speculative neighborhood property prices, assessments, and property tax collections than the 1977 version. Third, the lower property prices and rents in speculative neighborhoods under the 1976 version imply occupancy by lower income households than under the 1977 version. So long as some of the occupancy turnovers result in migration across tax jurisdiction bounds, a result of the 1976 version would be lower District per capita income, and thus lower income tax and sales tax revenues.

III. Summary

Speculation in the District housing market is the purchase, short-term holding (under 3 years), and sale of real property for profit in the form of capital gain. "Pure" speculators perform two services valued by the market: inventorying and risk bearing. Speculators also perform one or more of the following additional services: forecasting, appraisal, advertising, property assembly, repair, rehabilitation, new construction, rental, and purchase financing. Although most of these products are intangible, their production should not, for that reason, be considered any less valuable than the production of more physical or obvious services.

Production of the above services in the District housing market is highly competitive in two important ways. First, buyers and sellers of the services, or the products that embody them, are numerous and independent. Second, land, capital, and labor are mobile among alternative uses to a very great extent.

In a competitive market, speculators must, on the average—over all locations and time periods—make an annual rate of return comparable to that normally earned in other markets of comparable risk. In a competitive market, speculators' mark-up of property price must, on the average, cover no more or less than the cost of providing services. In any given neighborhood, at any given time, there may be profits above the competitive norm, or there may be losses. These are attributable to the inevitable problem of uncertainty, which speculators tend to mitigate through their production of information. At any rate, any profits (or losses) will not persist in a competitive market.

As part of the operation of the private property market system, speculators contribute toward the achievement of economic efficiency. By facilitating economic exchange, they allocate real property in its

present use—say, low-grade housing—from people who value it less to people who value it more. By facilitating and engaging in economic production, speculators allocate real property (and other productive resources) from lower valued to higher valued uses. By the former means, speculators increase the value obtained by society from a given sized "pie." By the latter means, they increase the size of that "pie" available to society. That which benefits society as a whole does not benefit all members of society. We now turn to the welfare distributive effects of speculation and related activities.

The direct gainers from speculators' activities are (1) the speculators and their hired factors in the real estate and construction industries, (2) landlords and homeowners whose property in speculative neighborhoods increases in value, whether or not they realize the increase through sale, and (3) other households whose housing consumption options as tenants, or owners, are improved by speculators' production of repaired, rehabilitated, or newly constructed dwellings, provision of information about their availability, or provision of mortgage financing.

The direct losers from speculation are (1) tenants who are evicted as a precondition for rehabilitation and/or conversion to owner-occupancy, and (2) other households whose (mostly low grade) housing consumption options are worsened by speculators' repair and rehabilitation, and by their promotion which attracts consumer competition. Evicted tenants' losses precipitated by speculators are both more frequent and larger because of rent controls. Property owners who experience property tax increases accompanied by and proportional to speculator-induced increases in the market value of their property do not lose wealth. In some cases, homeowners' welfare will be reduced by liquidity problems associated with property tax increases, or by a change in neighborhood or neighbor characteristics. However, the majority of homeowners (as well as all landlords) in neighborhoods where speculation occurs, gain welfare from speculators' activities.

The indirect welfare changes from speculation and related activities derive primarily from the effects of repair, rehabilitation, and new construction, on (1) the quantity, quality, and price of the District's housing stock, and (2) the migration of households thereby induced. There will be a tendency for low income and black households to exist and moderate income and white households to enter the District. The more that speculators contribute to the revitalization of inner city housing, the greater is the possibility of breaking up and dispersing slums. Finally, speculative activities of all types improve the District's fiscal position, thereby increasing the welfare of taxpayers and/or beneficiaries of government programs funded from local revenues. The indirect gains and losses of welfare operating through these channels will be unknown magnitude, distant in time, and diffused among many tenants and owners of property and other factors.

The proposed "transaction excise" is actually a tax on capital gain income realized from the purchase and sale of residential property. Its primary purpose is to protect the welfare of current District tenants in neighborhoods where constraints on their housing choices have been increasing. More specifically, the primary purpose of the tax is to deter eviction and to curb rising rents and prices of dwellings in speculative neighborhoods.

The 1976 version of the tax will achieve all of these goals. The services which speculators now provide will continue to be provided, but to a lesser extent. Most of the services are now partially supplied to "speculative" neighborhoods by nonspeculators such as realty brokers, building contractors, and savings and loan associations, Under the tax, some of the speculators who specialize in appraisal, advertising, repair, et cetera, will draw their capital, that is, stop speculating, and hire out their services to tax exempt landlords and homeowners in these neighborhoods. Some speculators will continue to repair or rehabilitate, and rent or occupy for longer periods to obtain exemption. But, the taxation of returns to speculators' capital will drive some of the capital and speculators' services out of the District residential housing market. Nonspeculators will not wholly fill the void created by speculators' departure, for any of a variety of reasons. Among the more important ones are these: some tax exempt homeowners and landlords (1) are more averse to risk, (2) have access to information and capital only at higher cost, and (3) can assemble property only through higher cost and more risky cooperative arrangements, relative to speculators. Consequently the 1976 version will deter the increasing quality, price, and rent of housing, and slow the rate of tenant eviction, in speculative neighborhoods.

The likely success of the tax in achieving the above purposes must be viewed in relation to its costs. The tax will deter all of the previously stated effects of speculators, including welfare gains to many District residents. It will create inefficiency in exchange and production, preventing real property and other resources from flowing from lower to higher valuing users, and from lower to higher valued uses. It will deter the revitalization of the District's housing stock, tend to perpetuate existing slums and their effects, and tend to create fiscal difficulties for the District government that may result in a curtailment of services.

The 1977 version of the tax, which exempts transactions following rehabilitation will be less successful in achieving the tax's primary purposes, because where rehabilitation occurs, it results in eviction and/or higher rent and price of the dwelling and neighboring dwellings. If the 1972–74 sample data from four neighborhoods are representative of District data on speculators' improvement costs and sale prices, then two-thirds of the District's speculative transfers would automatically qualify for the rehabilitation exemption.[42] Moreover, speculators owing one-third of the remaining properties would have incentive, under the tax, to expend enough additional money on improvement to also qualify. Thus, more than two-thirds of the speculative transfers would qualify for the exemption, as there would be more rehabilitation under the 1977 version than if there were no tax at all. Finally, some speculators in the remaining nonexempt properties—if those properties are destined for rehabilitation by specialists—would have incentive to vertically integrate their specialized

[42] According to the sample, in all cases the speculator qualifies for rehabilitation exemption by spending 15 percent of the sale price, rather than $10,000 on improvement. The 9-percent confidence interval for the proportion of speculative transfers that are exempt is approximately .40 to .87. We use the standard Clopper & Pearson method. It should be reemphasized that the random sample from the four neighborhoods may not be representative of the District's speculative transfers.

function with rehabilitation to circumvent the taxable transfer. Thus the 1977 version will allow most of the evictions and increasing rents and prices attributable to speculative activities to continue. According to the sample, perhaps two-ninths of, say, 450 annual speculative transfers—namely, the 100 that cause current tenants the least welfare loss—would be deterred by the 1977 version, for it does discourage speculation not coordinated with rehabilitation. It also follows that the costs of the 1977 version—in terms of foregone welfare gains discussed above—would be far less than the costs of the 1976 version.

A secondary purpose of the tax is to raise revenues. We estimate, with 95 percent confidence, that if housing market conditions in the future are no more favorable to speculators' activities than they were in 1972–74, the gains tax revenues under the 1976 and 1977 versions will be less than $430.889 and $369,808, respectively. In fact, the expected revenues are below the expected upper bound estimates of $217,333 and $158,484. These revenues must be weighed against decreases in property, income, and sales tax revenues losses that the gains tax tends to cause, and against the costs of administering the tax. From a fiscal standpoint, neither version of the proposed tax is promising.

IV. Recommendations

As a means of achieving economic efficiency, I oppose both versions of the tax. In the District residential housing market, there is no externality problem or market structure problem that could be used to justify the proposed levy.

As a means of achieving equity, I must also oppose both versions of the tax, for several reasons. First, there is the unresolved problem of defining equity for the Council as a whole. For the sake of argument, let us assume all agree that equity requires a movement towards greater equality of real income in the District. More specifically, suppose all agree that equity requires taking from those who have more real income and giving to those who have less, until the one out of eight District families below the poverty line [43] are raised above it. Agreement on such a policy would correctly label the District's major economic problem as poverty, not housing market failure.

Second, there are alternative means by which local government can attempt to redistribute real income. Some means are less efficient than others, in the sense that they reduce social welfare more. We cannot recommend the tax without first considering these alternative means. Also, some means of redistributing income are less fair than others, in the sense that they are more capricious and inconsistent in their treatment of people. The proposed tax would seriously violate the ability-to-pay criterion of equitable taxation, for the burden of the tax is not systematically related to the liable household's income or wealth. The tax would also seriously violate the horizontal equality criterion of equitable taxation; namely, while increasing the real income of some poverty-stricken households, the tax would also increase the real income of many households already above the poverty line, and be of

[43] U.S. Bureau of the Census, 1970.

no assistance to many below the line.[44] The proposed tax skirts the real poverty issue. As a means of redistributing real income, it lacks merit, for it would create inefficiencies and additional inequities. Whether its effects would be worse than alternative means cannot be judged without evaluating the alternatives.

Third, because local jurisdictions are spacially but part of the market area, their attempts to redistribute real income induce migration across jurisdictional bounds; the flight of losers and the attraction of gainers cause waste and undermine the long-term achievement of equity. The District government is severely constrained by the mobility of producers and consumers across District bounds, and can forestall this migration only by avoiding redistributive methods substantially different in kind or degree from those employed in other jurisdictions in the greater Washington area. Some of the major long-run problems created by the tax, especially the 1976 version, are a consequence of its effects on the movement of capital and residential location choices of households of different income levels, relative to the District's bounds. The task of redistributing real income cannot be achieved at the local level without a reduction in social welfare. A frontal attack on the real problem—poverty—by a policy of income maintenance can be realistically achieved only at the Federal level of government.

Public officials frequently advocate (1) greater efficiency and (2) greater equity for society (essentially all residents of the Washington SMSA). However, most officials must be primarily concerned with (3) increasing the welfare of constituents whom they represent. In the context of this study, the officials are Council members whose constituents are residents of the wards comprising the District, which is but part of the Washington SMSA. Council officials whose primary concern is the welfare of existing tenants in their wards facing the prospect of eviction can be sure that the 1976 version of the tax will delay or reduce the probability of eviction, or rising rent or price. However, there may be other policies, such as relocation assistance, that can provide some measure of aid for the evicted, while imposing lower costs on other groups of Washington SMSA residents. Council officials who can, to some extent, embrace efficiency and equity goals, officials who seek to strengthen the governments' tax base and quality of public services, officials who seek to prevent deterioration of the housing stock and the associated growth and perpetuation of existing slums, and officials who seek to protect the welfare of property owners and many tenants (those not threatened by speculation) in their wards, should all oppose the anti-speculation tax, in any form.

The 1977 version of the tax can be viewed as a compromise between those officials who favor the 1976 version and those who oppose a

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[44] An alternative concept of equity in taxation has special relevance to speculation in real property. This principle of taxation, associated with Henry George, is sometimes called the productivity ethic. It is based on the notion that some increases in the market value of property, such as those attributed to owner-produced improvements, are "earned," and other increases are "unearned." Only those that are earned should be retained by the owner. The others, which are attributed sometimes to chance, and other times to government-provided facilities and community-wide forces, should be taxed away because the owner expended no effort towards the value increment. The productivity ethic implies that risk-bearing and the production of information are not valuable services.

special gains tax on residential property in any form. The effect of exempting transfers following rehabilitation is to greatly attenuate the welfare gains and losses of the 1976 version. The available data suggest that only a minor portion—less than one-fourth—of tenants' speculator-induced housing problems are unrelated to rehabilitation. The 1977 version of the tax is a weak substitute for its predecessor, as a means of improving the lot of tenants in speculative neighborhoods. At the same time, the costs—welfare losses to others—are much lower than those that would result under the 1976 version.

THE ECONOMY OF THE DISTRICT OF COLUMBIA

(By Herrington J. Bryce, Vice President for Washington Operations, The Academy for Contemporary Problems)

I. Summary

Since 1943, population trends in the District of Columbia have been downward. Unlike many cities that have experienced rapid growth, the District is landlocked and cannot grow by annexation. But unlike many cities that have lost population, the District's economy remains vibrant.

The occupational structure of the District and its metropolitan area is a preview of the future economic structure of the nation as a whole. In a sense, the nation's economy is becoming more like that of the District—less dependent upon manufacturing.

Because it conducts several functions—especially education—that are not normally financed or administered by city government, the District's operating costs tend to be higher. Furthermore, having no state to turn to for aid, the District relies either on its own source of revenue or on the federal government to which it renders service and tax-exempt space. The city also attracts a number of tax-exempt organizations. Yet, the District's dependence on the federal government for fiscal assistance is not unduly great when compared to the dependence that other cities have on federal and state governments.

While concern continues on the part of local citizens regarding increases in their tax liabilities, a movement similar to Proposition 13 is not likely to gain momentum in the District. Two reasons are that the District depends less upon the property tax than do other cities and local officials have long publicly debated and pursued ways to reduce the tax burden. Another reason is that a large percentage of the voters in the city (being government-oriented) would not find an indiscriminate approach, such as Proposition 13, to their self-interest. Moreover, the District has no state to subsidize its revenue cuts as do the cities in California.

The President and Congress, who have the authority to ratify any budget decision, have expressed unwillingness to use federad dollars to bail out cities—including Washington—that choose to cut local taxes and transfer the cost of services to the federal government.

II. Introduction

The District of Columbia occupies 61.4 square miles and is the central city of the Washington metropolitan area. This metropolitan area occupies 2,812 square miles and contains about 3 million persons, just over 20 percent of whom live in the District. In 1973, after nearly 100 years without home rule, the District obtained limited home rule with

a popularly elected mayor and a 13-member city council. This paper, which discusses the economic characteristics of the District, begins with an overview of its population characteristics.

III. The Population of the District

Population size is an important determinant of the pressures that a city experiences for services, the cost of providing those services, and the size of a city's labor force. Hence, it is proper to begin any assessment of the city's economy with an evaluation of its population changes over time.

POPULATION GROWTH AND DECLINE

The population of the District of Columbia more than tripled between 1900 and World War II. From 279,000 people in 1900, it rose to a peak of 900,000 in 1943. Since that time, the population of the District has taken a downward trend. The only exception to this decline was a brief period of growth during the early 1960's. As of 1977, the U.S. Census Bureau listed the population of the District as 690,000.

The loss of population in the District is a part of a national shift from central cities to the suburbs. Between 1970 and 1976 the central city population in the country as a whole declined by 3.4 percent, while at the same time the suburban rings of metropolitan areas grew by 10.3 percent. During these years, the District's population declined by 7.2 percent—nearly twice the national rate of decline for central cities.[1]

While the District's population declined, the population of areas surrounding the District grew. The growth of the Washington suburbs and exurban areas did not occur simply because of the exodus of population from the District, however. The main source of migrants to the Virginia suburbs of Washington, D.C., was not the nation's capital, but Virginia itself. The Maryland suburbs grew during that period mostly because of migration (including black migration) from the District.[2] As a consequence of these and other factors, between 1960 and 1974 more than 1 million people were added to the area around the District (see Table 1). As a result, the District's share of the metropolitan population declined during this period from 38 percent to 24 percent. Due to the continuation of this trend, the population of the metropolitan suburbs is now more than four times that of the city.

The South is the only region of the country in which this graphic central city-suburban shift has not been pronounced. The reason is no doubt related to the tendency of central cities in the South to annex their suburbs. Annexation has been a major factor in explaining unusually high population growth rates among both small and large cities.[3] Unfortunately, the District has no opportunity to utilize this mechanism. Its growth has to rely on natural increase (a declining

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[1] U.S. Bureau of the Census, Current Population Reports, Series P–20, No. 307 (Washington, D.C.: Government Printing Office, 1977), p. 26.

[2] For a discussion of these migrations, see Vera Banks, "A Note on Variations in the Leading Stream of Migration to the Washington Metropolitan Area," in Herrington J. Bryce, ed., "Small Cities in Transition: The Dynamics of Growth and Decline" (Cambridge, Massachusetts: Ballinger Publishing Company, 1977); henceforth cited as Bryce, *Small Cities*.

[3] Advisory Commission on Intergovernmental Relations, "Trends in Metropolitan America" (Washington, D.C.: Government Printing Office, 1977), pp. 3–4 and 11–19.

factor in the country as a whole) or migration—a trend which favors smaller cities, especially those in the South and in the West.

TABLE 1.—POPULATION OF THE WASHINGTON METROPOLITAN AREA, DISTRICT OF COLUMBIA, AND SUBURBS, BY RACE

Year and race	Washington metropolitan area		District of Columbia		Suburbs	
	Population	Percentage	Population	Percentage	Population	Percentage
1950:						
White	1,117,930	76.6	517,865	64.6	601,065	91.2
Nonwhite	342,159	23.4	284,313	35.4	57,846	8.8
Total	1,460,089	100.0	802,178	100.0	658,911	100.0
1960:						
White	1,502,429	75.0	345,263	45.2	1,157,166	93.5
Nonwhite	499,468	25.0	418,693	54.8	80,775	6.5
Total	2,001,897	100.0	763,956	100.0	1,237,941	100.0
1970:						
White	2,131,043	74.5	210,863	27.9	1,920,180	91.2
Nonwhite	730,059	25.5	545,629	72.1	184,430	8.8
Total	2,861,102	100.0	756,492	100.0	2,104,610	100.0
1974:						
White	2,173,600	71.0	195,000	27.0	1,978,600	84.6
Nonwhite	856,400	27.9	518,600	71.8	337,800	14.4
Not reported	31,000	1.0	8,700	1.2	22,300	1.0
Total	3,061,000	100.0	722,300	100.0	2,338,700	100.0

Source: U.S. Bureau of the Census, "Census of Population," 1950, 1960, and 1970; and District of Columbia, Department of Manpower, "Manpower Information for Affirmative Action Programs, Fiscal Year 1976, Washington Metropolitan Area."

Given these facts, few observers would expect an expanded rate of population growth in the District during the next few years. Population could increase, but not very rapidly. Projections by the District government suggest that by 1980 the District's population will be 729,000; by 1985, 750,300; by 1990, 771,500; and by 1995, 793,300. In view of the current trend, however, these projections are optimistic.

At this point it is important to note that population decline per se is not without positive opportunities for improving the environment, lowering the rate of density, removing older and less habitable housing, and possibly moderating growth in the demand for public services—especially education. George Grier, for example, has clearly shown that while the population in the District has declined, its population structure in terms of age, income, and education has improved. Even though population declined. the number of households remained constant. but the average size of these households was smaller, with fewer children.[4]

POPULATION COMPOSITION

Between the turn of the century and the end of World War II, the labor force. Cost of government is related to population size and density—generally, the larger the size or density, the greater the cost. The poorer the population, the lower the tax base and the greater the pressures for social services. Further, the younger the population, the greater the demand for education. Conversely, the greater the proportion of the population that is elderly, the greater demand for services

[4] George Grier, "Changes in Income and Occupational Structures in Urban Areas," in Herrington J. Bryce and Leon Penne, eds., "Population Policy and Urban Conservation (Washington, D.C.: National League of Cities, 1976), pp. 50–55.

for the aged. A positive correlation also exists between race and city expenditures.[5]

Between the turn of the century and the end of World War II, the District's black population remained below 32 percent. The white population began a steady decline in 1943. Thus, the black-white ratio began to reverse. By 1974, as shown in Tables 2 and 3, the District, while accounting for only 23 percent of the total metropolitan population, accounted for 64 percent of its black population.

By 1975, with over 70 percent of its population black, the District ranked very high (among cities of its size in the United States) in the percentage of nonwhites. But a recent report by George Grier suggests that the influx of young whites to the city has not only increased, but also exceeded the flow of blacks.[6] Some of these young whites have moved into former black or Spanish-speaking neighborhoods. But the greatest number of whites moving into these minority neighborhoods are those who previously resided in some other part of the city.[7] Thus, the question of displacement has become important.

Displacement imposes social and monetary burdens upon those who are displaced, such as breakdown of community networks, higher rental fees, and increased transportation costs. The likelihood of other neighborhoods to deteriorate is increased to the extent that displacement causes a greater concentration of poor people in these areas.

TABLE 2.—POPULATION IN HOUSEHOLDS BY SEX AND RACE, WASHINGTON METROPOLITAN AREA, 1970–74

Type of household	1970	1974	1970–74 change	
			Number	Percentage
White	2,093,340	2,131,400	38,100	1.8
Nonwhite	728,340	843,600	115,260	15.8
Total household population	2,821,821	2,975,100	153,300	5.4
Total female household:				
White [1]	1,081,701	1,104,200	22,500	2.1
Black	368,343	414,800	46,500	12.6
Other minority [2]	16,808	28,300	11,500	68.4
Population	1,466,852	1,547,300	80,500	5.5
Spanish language population [3]	36,716	62,400	25,700	70.0
Total male household:				
White [1]	1,011,780	1,027,200	15,400	1.5
Black	328,485	373,500	45,000	13.7
Other minority [2]	14,604	27,000	12,400	84.9
Population	1,354,869	1,427,700	72,800	5.4
Spanish language population [3]	32,728	57,600	24,900	76.1

[1] Those who identified themselves as "Spanish Heritage" were included in the white population.
[2] "Other minority" includes American Oriental, Indian, Hawaiian, Korean, Aleut, Eskimo, Malayan, Polynesian, etc.
[3] "Spanish language" figures should not be added into the totals since members of the Spanish language population who did not so identify themselves are included in the white and minority statistics.

Source: U.S. Bureau of the Census, "Census of Population," 1970; and District of Columbia, Department of Manpower, "Manpower Information for Affirmative Action Programs, Fiscal Year 1976, Washington Metropolitan Area." Figures adjusted.

[5] For a review of the literature on the relationship between population, costs of public services, and economic diversification, see David Puryear, "Population Size, Efficiency, and Diversification," in Bryce "Small Cities." For a discussion of the relationship between city budgets and the proportion of a population which is nonwhite, see Roy W. Bahl and Alan Campbell, "City Budgets and the Black Constituency," in Herrington J. Bryce, ed., "Urban Governance and Minorities" (New York: Praeger Publishers, 1975), pp. 55–68.

[6] George Grier and Eunice S. Grier, "Movers to the City" (Washington, D.C.: Washington Center for Metropolitan Studies, 1977), pp. 9–48.

[7] Franklin James, "Back to the City," (Washington, D.C.: Urban Institute, 1978); Dennis E. Gale, "The Back-to-the-City Movement Revisited" (Washington, D.C.: Department of Urban and Regional Planning, George Washington University, 1977); and George Grier and Eunice S. Grier, "Urban Displacement: A Reconnaissance" (Washington, D.C.: U.S. Department of Housing and Urban Development, 1978).

TABLE 3.—POPULATION IN HOUSEHOLDS BY SEX AND RACE, DISTRICT OF COLUMBIA, 1970–74

Type of household	1970	1974	1970–74 change	
			Number	Percentage
White	181, 309	169, 100	−12, 209	−6. 7
Nonwhite	534, 083	512, 200	−21, 883	−4. 1
Total household population	715, 392	681, 200	−34, 200	−4. 8
White [1]	102, 904	91, 500	−11, 400	−11. 1
Black	279, 823	271, 200	−8, 600	−3. 1
Other minority [2]	4, 576	5, 300	700	15. 3
Total female household population	387, 303	367, 900	−19, 400	−5. 0
Spanish language population [3]	8, 517	11, 800	3, 300	38. 8
White [1]	78, 405	77, 600	−800	−1. 0
Black	245, 198	233, 500	−11, 700	−4. 8
Other minority [2]	4, 486	2, 200	−2, 300	−51. 3
Total male household population	328, 089	313, 300	−14, 800	−4. 5
Spanish language population [3]	6, 476	9, 200	2, 700	41. 7

[1] Those who identified themselves as "Spanish Heritage" were included in the white population.
[2] "Other minority" includes Orientals, American Indian, Hawaiian, Korean, Aleut, Eskimo, Malayan, Polynesian, etc.
[3] "Spanish language" figures should not be added into the totals since members of the Spanish language population who did not so identify themselves are included in the white and minority statistics.

Sources; U.S. Bureau of the Census, "Census of Population," 1970; and District of Columbia, Department of Manpower, "Manpower Information for Affirmative Action Programs, Fiscal Year 1976, Washington Metropolitan Area."

AGE OF POPULATION

The age distribution of a population is important because it determines the allocation of funds among alternative services, such as services for the young as opposed to those for the aged, and because many social problems, such as youth unemployment and crime, are closely correlated with age. Furthermore, the dependency rate of a population (the percentage outside the prime labor force, age 25–54) determines the productivity of that population, labor force participation rates, and welfare costs in the broad sense of that term.

The median age of the population in the United States is 28.8; in the District of Columbia it is 29.9 (1975), only a minor gap. However, a comparison between the age structure of the white and black populations of the District shows some significant differences. The nonwhite population in the District is younger, with a median age of 26.6, compared to a median age of 43.3 for whites. Moreover, 91 percent of the school-age population in the District is black, but 52 percent of the citizens over 65 are white. As shown in Table 4, the white population in the District has far fewer children and many more senior citizens than the nonwhite population in the city or the white or nonwhite population in the suburbs.

The prime working-age population in the District is proportionately larger than it is in the nation. Forty percent of the District's population is in the prime working age of 25–54 (1975). Nationally, only 36 percent of the total population is in this range. This advantage holds even when race is taken into account. In the District, 42 percent of the white and 39 percent of the black populations are in this range. Nationally, 37 percent of the white and 34 percent of the nonwhite populations fall within this age range.

SEX COMPOSITION OF POPULATION

The District of Columbia, like the nation, has more women than men. Fifty-four percent of its population is female, compared to 51 percent in the nation as a whole.

IV. Employment

As a result of progress in technology and communications, firms can now more readily shift their operations to new locations. Needing greater space and aided by federal programs in housing, transportation, water, and sewer construction, firms and households have moved from urban centers to their peripheries.[8] This shift from inner city to suburbs or exurbia has become a common pattern in the United States.[9]

Reflecting the national trend, unemployment (even for minorities, as argued by Andrew Brimmer [10]) has grown very rapidly outside of the District but has shown little growth since 1960 within Washington itself. As shown in Table 5, between 1960 and 1976, for example, employment more than tripled in the District's suburbs. Suburban employment grew by 218.6 percent, while in the District it grew by only 15.8 percent. Nevertheless, in this sense, the District is less handicapped than some other major cities such as Jersey City, New York, and Buffalo, which have experienced sharply declining employment.

INDUSTRY AND OCCUPATION

In the District, most industries have experienced a decline or slow growth in employment in the past few years, but there has been a notable upturn in construction, as shown in Table 6.

TABLE 4.—POPULATION BY AGE AND RACE FOR THE WASHINGTON AREA, DISTRICT OF COLUMBIA, AND SUBURBS, 1970

Age	Washington metropolitan area			District of Columbia			Suburbs		
	Total	White	Non-white	Total	White	Non-white	Total	White	Non-white
All ages	2,861,102	2,131,043	730,059	756,492	210,863	545,629	2,104,610	1,920,180	184,430
Percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 5	8.9	8.5	10.1	7.9	3.4	9.6	9.3	9.0	11.6
5 to 14	20.2	19.6	21.9	17.0	6.5	21.2	21.4	21.1	24.3
15 to 19	8.9	8.7	9.4	8.9	6.8	9.7	8.9	8.9	8.6
20 to 24	9.4	9.3	9.4	10.2	12.5	9.4	9.0	9.0	9.5
25 to 34	15.2	15.2	15.3	14.8	15.2	14.6	15.4	15.2	17.3
35 to 44	12.5	12.6	12.1	11.3	9.8	11.9	12.9	13.0	12.7
45 to 54	11.6	12.1	9.9	11.1	12.3	10.7	11.7	12.1	7.8
55 to 59	4.2	4.3	3.8	5.0	7.1	4.2	3.9	4.0	2.6
60 to 64	3.2	3.3	2.9	4.3	7.2	3.2	2.8	2.8	2.0
65 and over	6.0	6.4	5.1	9.4	19.2	5.6	4.8	4.9	3.6

Source: U.S. Bureau of the Census, Census of Population, 1970.

[8] Roger Vaughan, "The Urban Impacts of Federal Policies: Economic Development" (Santa Monica: Rand Corporation, 1977). This is the most current compendium on this this subject.

[9] "Trends in Metropolitan America,' pp. 6 and 44–49.

[10] Washington, Post, May 26, 1978.

TABLE 5.—TOTAL NONFARM WAGES AND SALARY EMPLOYMENT FOR THE WASHINGTON METROPOLITAN AREA, DISTRICT OF COLUMBIA, AND SUBURBS, SELECTED YEARS

[In thousands]

Year	Washington metropolitan area		District of Columbia		Suburbs	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
1960	744.3	100.0	502.4	67.5	241.9	32.5
1970	1,182.6	100.0	564.6	47.8	618.0	52.3
Change	438.3	58.9	62.2	12.4	376.1	155.5
1970	1,182.6	100.0	564.6	47.7	618.0	52.3
1976	1,352.7	100.0	582.0	43.0	770.7	57.0
Change	170.1	14.4	17.4	3.1	152.7	24.7
1960	744.3	100.0	502.4	67.5	241.9	32.5
1976	1,352.7	100.0	582.0	43.0	770.7	57.0
Change	608.4	81.7	79.6	15.8	528.8	218.6

Source: District of Columbia, Department of Manpower.

TABLE 6.—NONFARM EMPLOYMENT BY INDUSTRY, DISTRICT OF COLUMBIA

[In thousands]

Industry	1960	1970	1976	Percentage change	
				1960–70	1970–76
Total wage and salary employment	502.4	564.6	582.0	12.4	3.1
Manufacturing	20.2	18.6	16.0	−7.9	−14.0
Food	5.4	2.6	1.2	−51.9	−53.9
Printing and publishing	11.3	13.0	12.5	15.0	−3.9
Other	3.5	3.0	2.3	−14.3	−23.4
Construction	20.8	19.5	19.9	−6.3	2.1
Transportation, communications, and public utilities	28.2	30.7	28.7	8.9	−6.6
Transportation	15.0	11.3	11.7	−24.7	3.5
Communications and public utilities	13.2	19.4	17.0	47.0	−12.4
Trade	84.0	79.9	66.5	−4.9	−16.8
Wholesale	19.5	19.1	14.2	−2.1	−25.7
Retail	64.5	60.9	52.3	−5.6	−14.2
General merchandise	14.1	11.1	9.7	−21.3	−12.7
Food	6.1	5.4	4.5	−11.5	−16.7
Automotive	6.8	5.2	3.6	−23.6	−30.8
Apparel and accessories	5.4	5.1	4.4	−5.6	−13.8
Eating and drinking places	16.7	19.4	19.1	16.2	−1.6
Miscellaneous	15.4	14.7	10.9	−4.6	−25.9
Finance, insurance, and real estate	27.5	33.3	32.9	21.1	−1.3
Service	92.8	135.6	149.1	46.1	10.0
Hotels and lodging places	8.7	9.5	8.7	9.2	−8.5
Personal services	9.5	7.8	5.2	−17.9	−33.4
Other	74.6	118.3	135.2	58.6	14.3
Government	228.9	246.9	269.0	7.9	9.0
Federal	203.0	200.3	221.2	−1.3	10.4
Local	25.9	46.6	47.8	79.9	2.6

Source: District of Columbia, Department of Manpower, mimeo.

TABLE 7.—NONFARM EMPLOYMENT IN THE WASHINGTON METROPOLITAN AREA AND DISTRICT OF COLUMBIA, PERCENTAGE DISTRIBUTION

Industry	Washington metropolitan area			District of Columbia		
	1960	1970	1976	1960	1970	1976
Total wage and salary employment (thousands)	744.3	1,182.6	1,352.7	502.4	564.6	582.0
Percentage	100.0	100.0	100.0	100.0	100.0	100.0
Manufacturing	4.7	3.8	3.5	4.0	3.3	2.7
Food	1.0	.6	.4	1.1	.5	.2
Printing and publishing	1.8	1.6	1.5	2.2	2.3	2.1
Other	1.9	1.7	1.6	.7	.5	.4
Construction	6.7	5.9	5.4	4.1	3.5	3.4
Transportation, communications, and public utilities	6.0	5.2	4.7	5.6	5.4	4.9
Transportation	3.6	2.5	2.4	3.0	2.0	2.0
Communications and public utilities	2.4	2.6	2.3	2.6	3.4	2.9
Trade	19.8	19.4	19.2	16.7	14.2	11.4
Wholesale	3.6	3.3	3.1	3.9	3.4	2.4
Retail	16.2	16.1	16.1	12.8	10.8	9.0
General merchandise	3.1	3.1	3.1	2.8	2.0	1.7
Food	2.3	2.4	2.2	1.2	1.0	.8
Automotive	2.2	2.2	2.1	1.4	.9	.6
Apparel and accessories	1.2	1.1	1.0	1.1	.9	.8
Eating and drinking places	3.8	3.8	4.4	3.3	3.4	3.3
Miscellaneous	3.7	3.5	3.3	3.1	2.6	1.9
Finance, insurance, and real estate	5.5	5.8	5.8	5.5	5.9	5.7
Service	18.3	21.5	23.1	18.5	24.0	25.6
Hotels and lodging places	1.3	1.2	1.3	1.7	1.7	1.5
Personal services	2.1	1.6	1.2	1.9	1.4	.9
Other	15.0	18.7	20.7	14.8	21.0	23.2
Government	39.0	38.5	38.3	45.6	43.7	46.2
Federal	31.7	27.1	26.1	40.4	35.5	38.0
State and local	7.3	11.4	12.2	5.2	8.3	8.2

Source: District of Columbia, Department of Manpower, mimeo.

TABLE 8.—EMPLOYMENT BY INDUSTRY IN THE WASHINGTON METROPOLITAN AREA, 1974 AND PROJECTED TO 1985

Industry	Actual 1974	Projected 1985	Percentage change 1974–85
All industries	1,416,660	1,795,290	26.7
Agriculture, forestry, and fisheries	9,730	8,220	−15.5
Mining	1,100	1,020	−7.3
Construction	106,940	127,680	19.4
General building	29,090	33,030	13.5
General contractors, except building	25,000	31,080	24.4
Special trade contractors	52,850	63,560	20.3
Manufacturing	65,250	74,160	13.7
Durable goods	20,640	24,230	17.4
Nondurable goods	44,610	49,930	11.9
Printing and publishing	34,820	41,320	18.6
Other	9,790	8,610	−12.1
Transportation, communications, and public utilities	79,260	99,000	24.9
Transportation	39,660	47,860	20.7
Communications	20,960	26,330	25.6
Utilities and sanitary services	18,640	24,810	33.2
Wholesale and retail trade	259,790	328,030	26.3
Wholesale trade	42,760	54,000	26.3
Retail trade	217,030	274,030	26.3
General merchandise	46,730	59,990	28.4
Food and dairy stores	28,710	36,870	28.4
Auto dealers and gas stations	26,030	34,740	33.5
Apparel and accessories	14,420	18,180	26.1
Furniture and appliances	10,760	13,810	28.3
Eating and drinking places	54,410	67,290	23.7
Miscellaneous retail stores	35,970	43,160	20.0
Finance, insurance, and real estate	87,220	118,280	35.6
Finance	31,480	43,510	38.2
Insurance	20,190	26,990	33.7
Real estate	35,560	47,780	34.4
Services	456,920	601,790	31.7
Hotels and lodging places	17,010	22,020	29.5
Personal services	20,300	21,950	8.1
Business services	67,780	100,310	48.0
Auto and other repair services	11,350	15,090	33.0
Motion pictures and other entertainment	12,020	14,780	23.0
Medical and other health services	86,730	140,230	61.7
Legal services	16,120	21,940	36.1
Educational services	101,870	119,650	17.5
Museums, art galleries, and zoos	2,830	3,670	29.7
Nonprofit organizations	59,890	70,200	17.2
Engineering, accounting, and other professional services	38,250	56,110	46.7
Government	350,450	437,110	24.7
Federal	308,390	386,880	25.5
State	21,180	24,760	16.9
Local	20,880	25,470	22.0

Source: District of Columbia, Department of Manpower, "Industrial and Occupational Employment to 1985," July 1977

The Washington metropolitan area is dominated by industries that employ large proportions of white-collar workers. Thirty-eight percent of all metropolitan area employment is in government, 23 percent is in service, and 19 percent is in trade (see Table 7). Within the District itself these industries dominate, although the government and service sectors provide a greater proportion of jobs while trade has a smaller share than in the total metropolitan area. Construction, a particularly volatile industry, constitutes only 3 percent of all employment in the

District. The occupational distribution of the District's labor force and the employment structure of its economy make it more stable in periods of recession.

The fastest-growing major industries in the metropolitan area are shown in Table 8, which gives projections to 1985. Impressive rates of growth are expected in the Finance-Insurance-Real Estate sector and in business and medical services.

The shift on the national level from manufacturing into services and government means that the current District economy, with its low proportion of employment in manufacturing as compared to services and government, is a forerunner of the future employment mix of the national economy.

It is estimated that by 1985, in the Washington area, the distribution of employment by industry will shift, but only slightly, away from manufacturing, and toward the finance and service sectors (see Table 9). Nationally, the shifts will be similar—away from manufacturing and agriculture, and toward the service sector and state and local government. The service sector and the government sector are already strong in the District and its metropolitan area.

RACE AND EMPLOYMENT

The Washington metropolitan area is a white-collar economy. Seventy-one percent of all workers fall into the professional, technical, managerial, sales, and clerical categories. No other major metropolitan area comes close to this percentage, the next highest being the Denver-Boulder area with 62 percent.[11] By contrast, the national proportion of white-collar workers is 49 percent.

As is the case nationwide, white residents in the District of Columbia are relatively more concentrated in high-paying occupations. For example, 73 percent of all white men working in the District are employed as professional, technical or managerial workers, compared to 17 percent of black men. Fifty-three percent of all white women are employed in these occupations, compared to 14 percent of black women. But most craftsmen who reside in the District (81 percent) are black men.

The concentration of any sizable group into a few occupations has economic implications. The impact falls both on wages and employment. Wages in the excluded occupations remain artificially high in the short run, while wages in those occupations in which blacks are overrepresented are kept artificially low.[12] The point is that discrimination in employment either against minorities (which comprise a sizable percentage of the District's population) or against women (who outnumber men, as discussed earlier) makes it difficult for the labor market to function smoothly. It reduces mobility of labor among occupations, causes unemployment to be artificially high, and makes earnings differentials artificially large as workers are unable to move from one occupation to another with relative ease. More importantly over the long run, it makes entry into occupations extremely difficult. The fewer the people who enter, the more artificially high are the earnings.

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[11] Bureau of Labor Statistics, "Geographic Profile of Employment and Unemployment, 1975," Report 481 (Washington, D.C.: U.S. Department of Labor, 1977).

[12] Barbara Bergsman, "The Effects on White Incomes of Discrimination in Employment," Journal of Human Resources 79 (March-April 1971).

V. The District as City, County, and State

Because of its singular status, the District of Columbia must function as if it were a city, a county, and a state. The impact of these triple roles is felt in the budget. The District must provide many services and therefore make many expenditures that in other "cities" are often left to other levels of government.

It has been estimated, for example, that state services that the District finances amount to several hundred million dollars in fiscal 1978. These services included Medicaid, Aid to Families with Dependent Children, corrections, courts, institutional care, and higher education.[13]

Furthermore, many cities receive intergovernmental transfers of funds from states as well as from the federal government. Hence, to some extent the federal transfer to the District might be viewed partly as a substitute for the transfers that the District fails to get because it is not a conventional city within a state.[14] It might also be noted that intergovernmental transfers are steadily becoming a common practice among cities.[15] The fact the federal share of the total District budget should be growing is not, therefore, unusual.

TABLE 9.—DISTRIBUTION OF EMPLOYMENT BY INDUSTRY FOR THE WASHINGTON METROPOLITAN AREA AND THE UNITED STATES, PROJECTIONS TO 1985

Industry	Washington metropolitan area		United States	
	1974	1985	1973	1985
Total	1,416,660	1,795,290	89,654,000	109,565,000
Percentage	100.0	100.0	100.0	100.0
Agriculture	.7	.5	3.8	2.1
Mining	.1	.1	.8	.8
Construction	7.5	7.1	5.4	5.3
Manufacturing	4.6	4.1	22.8	20.6
Durable goods	1.5	1.3	13.5	12.5
Nondurable goods	3.1	2.8	9.4	8.2
Transportation and public utilities	5.6	5.5	5.4	4.9
Trade	18.3	18.3	21.7	21.2
Wholesale	3.0	3.0	4.9	4.7
Retail	15.3	15.3	16.7	16.5
Finance, insurance, and real estate	6.2	6.6	5.0	5.4
Service	32.3	33.5	19.8	22.1
Government	24.7	24.3	15.3	17.7
Federal	21.8	21.5	3.0	2.9
State and local	3.0	2.8	12.4	14.5

Sources: District of Columbia, Department of Manpower (see also table 8); and Thomas J. Mooney and John H. Tchetter, "Revised Industry Projections to 1985," Monthly Labor Review (November 1976): 6.

[13] Comer Coppie, "Restructuring the Financing of State Functions Performed by the District Government" (Washington, D.C.: District of Columbia Budget Office, 1976).

[14] For a more in-depth discussion of the issues surrounding federal payments, see Michael E. Bell, "The Federal Payment to the District of Columbia" (Washington, D.C.: District of Columbia Budget Office, 1976).

[15] See John Shannon and John Ross, "Cities: Their Increasing Dependence on Federal and State Aid," in Bryce, "Small Cities." See also, Advisory Commission on Intergovernmental Relations, "The Federal Component of State Aid to Local Government" (Washington, D.C.: Government Printing Office, 1977), and Richard P. Nathan, "The Outlook of Federal Grants to Cities" in Roy W. Bahl, ed., "Fiscal Outlook for Cities: Implications of a National Urban Policy" (Syracuse, N.Y.: Syracuse University Press, forthcoming).

The budgets of many cities are lower than they would be if many functions were discharged by them rather than by special districts. Such districts are independent taxing and spending authorities and may take the form of independent school districts and water, sewer, and sanitation authorities. Since the District of Columbia does not have any speical districts, the full costs of all such services are reflected in its budget.

Furthermore, many cities enter into interjurisdictional agreements which share and reduce costs. The District of Columbia participates in only one such agreement—the transportation authority.

But the District does participate in a regional council of governments (Metropolitan Washington Council of Governments) that began in 1957. The Council of Governments provides a number of planning and other services for the jurisdictions in the metropolitan area. The District carries a vote on the council in proportion to its size. Dues are determined by the population of the local jurisdiction. Because the District is the largest local jurisdiction, it is the largest dues-paying member of the council. However, the leading financial contributor to the council, as is true of some other regional councils, is the federal government.

VI. The Economic Well-Being of the Population

Recent per capita income figures show that among states the District ranks second, with a per capita income of $8,648 in 1976.[16] Its per capita income is above the national average.

Nevertheless, in 1975 the rate of poverty among residents of the District of Columbia was 12.5 percent, as compared with 11.4 percent for the nation as a whole.[17] In 1970, when data by race were available, 90 percent of the poor people in the District were black, although blacks accounted for only 74 percent of all families.

Median family income is another measure of economic well-being. In 1974 the median family income in the District was $10,800.[18] For central cities in Standard Metropolitan Statistical Areas (SMSAs) of one million or more inhabitants, the median family income was $12.-341 and the national average was $12.902, in 1974. In general, the economic well-being of the city's populaiton is good, but as in many cities, there is wide discrepancy among the District's neighborhoods and people in terms of income.[19]

VII. The Budget

From a total budget of $340,530,000 in 1967, the budget of the District of Columbia in fiscal year 1976 grew to $1,076,645,000, and the following fiscal year it rose to $1,160,251,700. The projected budget for fiscal year 1979 is $1.3 billion.

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[16] Bureau of Economic Analysis, "Survey of Current Business" (Washington, D.C.: U.S. Department of Commerce, 1976).

[17] U.S. Bureau of the Census, "Current Population Reports," Series P–60, No. 112 (Washington, D.C.: Government Printing Office, 1978), pp. 11, 95.

[18] U.S. Bureau of the Census, "Current Population Reports," Series P–60, No. 103, (Washington, D.C.: Government Printing Office, 1976), p. 9.

[19] For a description of income by zip code in the District, see "Statistics on District of Columbia Income, Calendar Year 1974 Returns" (Washington, D.C.: District of Columbia Department of Finance and Revenue 1976), p. 39.

In addition to proposing an operating budget, the mayor prepares and submits a multiyear fiscal plan.

THE BUDGET PROCESS

The budget process of the District of Columbia involves local citizens and government officials, Congress, and the President. The mayor is responsible for preparing the budget and for submitting it with any supplementary proposals to city council. The city council holds public hearings and adopts a budget act. The mayor submits this act to the President, who then submits the recommendations of the administration to Congress. Congress acts upon the budget and it is transmitted to the President for his signature.

Actually, at every stage of the budget process there might be delay and considerable disagreement. The mayor does have a veto over the budget after it is submitted to him by city council. This veto may be overridden by a two-thirds vote of the council. Congress possesses the power of line-item review and veto, and the appropriations committees of both the House and the Senate must act on appropriations. The final budget must be approved by the President.

The budgets of the court system and of the school district are included in the mayor budget proposal, but are not subject to line-item review by the mayor or city council. The mayor does set the limits for the school budget, however, and is free to comment on the budget of the court system.

Although an upper level of government always has some influence over any city's budget, the unique aspect of the District's situation is that this review plus a veto power lie in a legislative body (Congress) in which the District presently has no voting power and has only nonvoting representation in the lower house. However, Congress has passed a bill, which the President signed, that, if ratified by at least 38 state legislatures within the next seven years, will provide the District with two voting members in the Senate and two in the House of Representatives.

Furthermore, although the mayor has no line-item veto over the school budget, Congress does. In effect, therefore, the operating budget, personnel levels of individual city agencies (and consequently the city's program priorities), and capital improvement programs, as well as federal money transfers to the city, are all subject to external control by the Executive (including the operating agencies) and legislative branches of the federal government.

EXPENDITURES

The reader will note that heavy reliance is made on fiscal year 1976 data. This is the most recent year for which fiscal data for municipalities in the country as a whole is available. These data provide a basis for comparison. Expenditures for the budget can be broken down into two large categories: operating expenses and capital expenses. As is common in most city jurisdictions, capital expenditures account for a much smaller share of total expenses than operating expenses, and labor costs comprise the largest part of operating costs.

In the District labor costs accounted for 72 percent of the total operating budget in fiscal year 1976, when total general fund direct operating expenses were $922,616,000. Of this amount, $667,477,000 was for personnel services.

The District's expenditures are related to its functions as a city, county, state, and national capital. Tables 10 and 11 show the the distribution of expenditures over time. The human resources category (i.e., welfare) has the greatest percentage of expenditures in the District, with public safety and education almost as great. These three areas account respectively for 25, 24, and 23 percent of total expenditures.

The District is not easily compared with other cities because of its multilevel government functions. But in all cities of the District's size (500,000 to 1 million population), expenditures in 1975–76 were largest for police protection, education, and public welfare.[20]

TABLE 10.—APPROPRIATED REVENUES AND OBLIGATIONS FOR THE DISTRICT OF COLUMBIA FOR FISCAL YEARS ENDED JUNE 1967, 1972, AND 1976

[Dollar amount in thousands]

	1967	1972	1976	Percentage change, 1967–76
REVENUES				
Income taxes	$64,521	$137,466	$212,597	229.5
Sales taxes	81,682	134,760	192,473	135.6
Property taxes	93,970	142,667	148,911	58.5
Other taxes	21,972	24,005	35,220	60.3
From U.S. Government:				
Grants-in-aid	321			
Federal payment	61,394	177,740	254,637	314.8
Revenue sharing			26,655	
Water and sewage charges	14,664	18,962	25,852	76.3
Other service charges	6,041	8,330	10,378	71.8
Fines and forfeitures	4,428	8,411	12,219	175.9
Motor vehicle registration	4,669	5,237	14,826	217.5
Licensing and fees	8,206	14,346	8,527	3.9
Other	5,077	5,761	16,764	229.4
Police and firemen's retirement	3,720	8,181	12,756	242.9
Total	370,665	685,866	971,775	162.2
OBLIGATIONS				
General, including Metro subsidy	22,726	59,585	115,377	407.7
Public safety	89,902	170,579	248,421	176.3
Education	86,099	169,821	239,891	178.6
Recreation	12,781	12,868	16,301	27.5
Human resources	89,379	185,177	261,695	192.8
Transportation	14,984	20,903	25,479	70.0
Environmental services	24,594	40,122	59,833	143.3
Other	2,636	170	3,185	20.8
Debt service	7,429	24,546	63,376	753.1
Total	350,530	683,771	1,033,558	194.9
Total revenue over (under) obligations	20,135	2,095	(61,783)	

Source: District of Columbia, Annual Financial Report, Fiscal Year 1976.

[20] U.S. Bureau of the Census, "City Government Finances in 1972–1973" (Washington, D.C.: Government Printing Office, 1977).

TABLE 11.—APPROPRIATED REVENUES AND OBLIGATIONS FOR THE DISTRICT OF COLUMBIA FOR FISCAL YEARS ENDED JUNE 1967, 1972, AND 1976

[In percentages]

	1967	1972	1976
REVENUES			
Income taxes	17.4	20.0	21.9
Sales taxes	22.0	19.6	19.8
Property taxes	25.4	20.8	15.3
Other taxes	5.9	3.5	3.6
From U.S. Government:			
Grants-in-aid	.1		
Federal payment	16.6	25.9	26.2
Revenue sharing			2.7
Water and sewage	4.0	2.8	2.7
Other service charges	1.6	1.2	1.1
Fines	1.2	1.2	1.3
Motor vehicle registration	1.3	.8	1.5
Licensing	2.2	2.1	.9
Other	1.4	.8	1.7
Police and firemen's retirement	1.0	1.2	1.3
Total	100.0	100.0	100.0
OBLIGATIONS			
General, including Metro subsidy	6.5	8.7	11.2
Public safety	25.6	24.9	24.0
Education	24.6	24.8	23.2
Recreation	3.6	1.9	1.6
Human resources	25.5	27.1	25.3
Transportation	4.3	3.1	2.5
Environmental services	7.0	5.9	5.8
Other	.8	.1	.3
Debt service	2.1	3.6	6.1
Total	100.0	100.0	100.0

Source: District of Columbia, Annual Financial Report, Fiscal Year 1976.

It should be noted that it is precisely in some of these functions—especially education—that state aid to cities is greatest. In 1974, education alone accounted for 59 percent of state aid to cities.[21] Being a quasi-state, the District receives no such "state" aid.

RECEIPTS

The major sources of receipts or revenues for the District government are federal payments and income, sales, and property taxes, in that order. As shown in Table 11, in 1976, these sources provided 26.2, 21.9, 19.8, and 15.3 percent, respectively, of the total revenues of the District.

As stated earlier, any attempt to compare or to analyze the public finances of the District of Columbia requires a firm understanding that the District functions as if it were a state, county, and city. Accordingly, calculations by the Council of Governments suggest that 75 percent of the revenues gained from the sales tax, 80 percent of the income tax, 66 percent of the recordation tax, and 20 percent of the cigarette tax are derived from the Districts state taxing powers. The remainder is associated with its local taxing powers. Other taxes, par-

[21] Advisory Commission on Intergovernmental Relations, "State Intergovernmental and, The Intergovernmental Grants System: An Assessment and Proposed Policies" (Washington, D.C.: Government Printing Office, 1977), pp. 11 and 30–31.

ticularly excise, licensing, and permit taxes, could not be broken down into local and state sources.[22]

The emphasis on the personal and real property taxes in the District is less than it is among other cities. In the nation as a whole, according to 1975–76 figures, 26 percent of the revenues for cities is obtained from property taxes. Cities the size of the District usually derive 22 percent of their revenues from that source.[23] Even the Fiscal year 1978 District budget shows only 15 percent of its revenues coming from the property tax.

Currently, the most controversial revenue sources in the District are the federal transfers, the commuter tax, and the property tax. The use of the property tax by any jurisdiction today raises several issues, such as the relative assessment of commercial property as compared with residential property; the regressiveness and burden of the tax; the use of the tax to finance education; the level of property tax delinquency; and the property tax rate in surrounding jurisdictions which, in a sense, compete to attract households as well as firms. The effective real property tax rate in the District is higher than in many of the surrounding areas.[24] These higher effective rates are necessary to draw the same yield from a property tax when exemptions, as in the District, are especially large.

Recently reduced new rates on owner-occupied housing were adopted. The current property tax rate is $1.83 per $100 of assessed valuation on commercial and some residential properties. Residential property that is owner-occupied is assessed at $1.54 per $100 of assessed valuation. Residential property with five units or less that is owner-occupied has an exemption of $9,000. Properties are assessed at 100 percent of estimated market value.

The frequency of property tax delinquency is another consideration. This has been a serious problem in many cities, including New York. The rate of tax delinquency in the District was 3.5 percent for fiscal year 1976, whereas in a city like Newark it was approximately 15 percent. However, almost all delinquent taxes can theoretically be collected eventually by the District through liens placed against property. Delinquency does reduce cash flow.

But the most significant feature causing diminished property tax revenues in the District of Columbia is the large portion of land that is exempt because of charitable, nonprofit, or government use. It is estimated that 54.4 percent of the land area or 56.3 percent of the land value is exempt.

Some of the jurisdictions around the District are presently considering variations of Proposition 13. But California's Proposition 13 will probably have a negligible effect on the District of Columbia's property taxes. As compared to other cities, the District is not highly dependent upon property taxes, and it recently was forced to reduce property taxes that had been illegally increased. Moreover, to their

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[22] "Local-State-Federal Fiscal Flows and Functions in the National Capital Metropolitan Region," Fiscal Analysis, vol. 6 (Washington, D.C.: Metropolitan Washington Council of Governments, 1976), p. 18.

[23] U.S. Bureau of the Census, "City Government Finances in 1975–76" (Washington, D.C.: Government Printing Office, 1977), p. 7.

[24] "A Comparison of Tax Rates in the Washington Metropolitan Area" (Washington, D.C.: District of Columbia Department of Finance and Revenue, 1976).

credit, major political candidates have strongly advocated property tax reform for the past several years, and aside from the legal questions mentioned above, lower rates and higher income exemptions were adopted.

The income tax is another thorny revenue issue. The District of Columbia taxes the personal income of individual residents who maintain permanent residence within its boundaries or who live in the District for more than seven months in any calendar year. Elected officials of the U.S. government, certain congressional staff members, certain appointed officials of the Executive Branch, and nonresidents and persons from foreign countries who are employed by embassies and international organizations are exempt from payment of this tax. Also exempt are single and married persons with very low incomes.

A central problem of the personal income tax is that the District, by virtue of the Home Rule Charter, is explicitly restricted from imposing a nonresident tax. However, states that have been authorized by their legislatures to impose an income tax usually also have the authority to impose a nonresident tax. Furthermore, many cities do impose a payroll tax on nonresidents, for example, all major cities of Ohio and Pennsylvania, New York City, Detroit, Oakland, San Francisco, and St. Louis. In Cleveland, the imposition of a commuter (payroll) tax nearly doubled the city's income tax base.[25]

As can be determined from Table 12, about 56 percent of the workers in the city of Washington live outside of the city, while 8 percent of the workers in other localities within the metropolitan area are District residents. When these statistics are linked with the fact that most workers in the District who live outside its boundaries are likely to be at higher income levels, it is little wonder that the push by the District's elected officials to have a commuter (payroll) tax is undeterred by the threat of reciprocity. It is estimated by the District's Department of Finance and Revenue that a nonresident income tax could yield up to $247.1 million in net additional income in fiscal year 1979.

Part of the debate over the commuter tax (as a payroll tax on those who earn their living in the District but do not reside there) has to do with the assessment of both costs and benefits associated with the activities of the nonresidents. These include not only work, but also the use of public facilities and general public services. The cost-benefit ratios are still in dispute.[26] In addition, there is the question of whether the sales tax imposed by the District is in a sense a tax on nonresidents and therefore substitutes for a nonresident income tax. These issues remain unresolved, and the request for authority to impose a nonresident income tax continues as a priority of the District government. This authority is now denied by charter.

Another concern on the receipt side of the District's budget relates to intergovernmental transfers. Unlike other cities, the District's only source of intergovernmental transfers is the federal government. These transfers come in two different forms. First, there is the federal payment referred to above. Since 1965 these payments have grown from

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[25] Frederick D. Stocker, "Diversification of the Local Revenue System: Income and Sales Taxes, User Charges, Federal Grants," National Tax Journal 29 (September 1976) :313–322.

[26] For a discussion of these issues, see Kenneth V. Greene, William B. Neenan, and Claudia D. Scott, "Fiscal Interactions in a Metroplitan Area" (Lexington, Massachusetts: Lexington Books, 1974).

$37.5 million to $276 million in fiscal years 1977 and 1978. They constitute better than 20 percent of the total actual receipts of the District government and 46 percent of the intergovernmental transfers from the federal government to the city.

At this writing, it appears that the federal payment to the city for the fiscal 1979 budget will be below the level requested by the city and the President, and lower than it has been in previous years. The House-Senate Conference Committee has agreed upon a federal payment of $235 million, which means that the federal payment will account for roughly 18 percent of the total city budget. When figured as a percentage of the city budget, this is the lowest federal contribution since 1967.

TABLE 12.—WHERE AREA RESIDENTS LIVE AND WHERE THEY WORK

Area of residence	Area of employment						
	Alexandria	Arlington	District of Columbia	Fairfax	Loudoun Prince William County	Montgomery County	Prince Georges County
Alexandria	14,477	9,681	16,441	5,980	338	831	747
Arlington [1]	3,053	36,596	36,680	6,520	370	2,268	1,147
District of Columbia	2,109	11,858	214,704	3,456	237	16,201	12,553
Fairfax County [2]	13,730	33,856	46,500	69,661	2,367	4,956	3,105
Loudoun-Prince William County	2,129	4,476	4,938	9,434	25,480	943	478
Montgomery County	792	5,525	66,967	2,602	222	106,098	11,027
Prince Georges County	2,118	8,136	96,482	3,051	199	19,154	105,721
Total metropolitan area	38,408	110,128	408,712	100,704	29,213	150,751	134,778

[1] Includes the city of Falls Church.
[2] Includes the city of Fairfax.

Source: U.S. Bureau of the Census, Census of Population, 1970, as compiled by the Washington Post and published by Metropolitan Washington Council of Governments in Metropolitan Fiscal Analysis. vol. 2, September 1975, fig. 3.

The Home Rule Charter states that the following considerations must be taken into account when considering the federal impact on the city and in determining the federal payments:

1. Revenues which cannot be gotten because of the lack of commercial and industrial property.
2. Revenues which cannot be gotten because of the relative lack of taxable business income.
3. Revenues which are lost because of the exemptions from District taxes.
4. Net costs associated with providing services to nonprofit organizations and corporate offices doing business only with the federal government.
5. Costs of services provided to the federal government.
6. Expenditures which the District undertakes because of its special status as the nation's capital and its other unique relationships to the federal government.
7. Benefits of grants-in-aid relative to aid given other states and local governments.
8. Benefits of services rendered the District by the federal government.
9. Relative tax burden on District residents compared with the residents of other jurisdictions in the District's metropolitan area and in other cities of comparable size.[27]

[27] "District of Columbia Self-Government and Governmental Reorganization Act" (Public Law 93–198). Statutes at Large, vol. 87 (1973), p. 774.

Although the District benefits from the federal presence in a number of ways, including the availability of federal facilities as tourist sites and as available resources and amenities to the District community, federal presence also imposes several burdens on the city. For example, the federal government now occupies more than 13,000 acres of land and owns several thousand vehicles. Both this extensive acreage and fleet of vehicles are tax-exempt. Table 13 shows an estimate of the negative impact of the federal presence on the District.

DEBT SERVICES

It is not uncommon to find limitations on the borrowing activities of cities. Like many cities its size, the District of Columbia is permitted to borrow. As of June 30, 1976, the long-term District debt outstanding was $1,086,900,000. About 60 percent of the debt ($644,565,575) was incurred as of June 30, 1973, prior to home rule.

At the time it was granted home rule, the District was also given the authority to borrow in the capital market. That authority was suspended by Congress pending an audit and update of the city's accounting system. Therefore, the District continues to borrow from the federal Treasury. The authority to borrow in this manner is renewed annually by Congress.

The District is authorized to issue both general obligation and revenue bonds. General obligation bonds must be paid annually beginning three years after the issue. These bonds may be redeemed before maturity, and interest earned on them is exempt from taxes. The bonds may be secured through a special tax, other city revenues, and federal payments. A sinking fund is created for meeting the debt service, and the full faith and credit of the District government is pledged to support the bonds.

TABLE 13.—*Estimated negative impact of the presence of the Federal Government on the District of Columbia tax revenue*

	Million
Revenues lost because of Federal property exempted from District of Columbia taxes:	
Federal real estate, 1976	$99.4
Other exemptions, 1976 (foreign governments and special acts of Congress)	5.4
Federal personal property, 1976 (eliminated)	18.5
Subtotal	123.3
Revenues lost because of congressional restraints on District of Columbia taxing authority:	
Nonresident individual income tax, 1976	188.0
Preferential tax treatment of professionals, franchise tax	8.5
Exemption of congressional employees and Presidential appointees	2.5
Subtotal	199.0
Revenues lost because of diplomatic exemptions: All nonproperty tax revenue lost	8.4
Revenues lost because of Federal restrictions on the taxation of military	16.3
Estimated total impact of Federal presence	347.0

Source: District of Columbia, Department of Finance and Revenue, "Fiscal Planning and Research," October 15, 1975.

The District may also issue revenue bonds. The full faith and credit of the District government may not be pledged, the property of the District or of the United States government may not be mortgaged, and public credit may not be pledged in support of private undertakings associated with these funds.

The District may also issue short-term notes. These notes may be used to provide operating funds amounting to no more than 2 percent of the total fiscal year appropriations if the bonds are issued to cover shortfalls in revenues, or 20 percent of the anticipated revenues in all other cases.

As is customary for many cities, the District of Columbia is restricted in terms of total long-term debt service. This limitation is 14 percent of the District's revenue. At current revenues, the District is about 55 percent below its limit.

PENSION FUNDS

Many cities are likely to encounter fiscal problems because of the nature of their pension plans—specifically, because of benefits and underfunding. In the District of Columbia most employees are covered by the Federal Civil Service Retirement System. In addition, the District operates three pension programs: the Metropolitan Police and Fire Retirement System, the Teachers Retirement System, and the Judges Retirement System. The first of these is on a pay-as-you-go basis with employee contributions deposited in the District's General Fund. Each of the other two systems has a trust fund.

Because its retirement systems had been unfunded, upon obtaining home rule, the District began a program to amortize liabilities. In addition to the funding problem, the police and fire retirement program is under attack as some employees who claim work-related disabilities retire with sizable tax-exempt benefits.

It is to be understood that many of the problems inherent in these programs are the result of decisions made by Congress prior to home rule, some dating back to the 1930s.

VIII. Conclusions

The search for new revenue sources is common among cities.[28] The District is no exception. At least one study has suggested that the city's performance in taxing is already above average and that—using a national tax effort as a benchmark—only limited additional revenues could be realized by increasing most tax rates.[29] One option for other cities is greater State grants-in-aid or transfer of city functions to the State level. That option is not available to the District, which is not part of a State. Another option is to transfer welfare to the Federal Government. This option by itself will aid few cities since their contribution to welfare programs is nearly nil, but it would aid the District, Baltimore, New York, and the few other cities that are also counties.

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[28] For a discussion of options cites may contemplate, see William Oakland, "Financal Relief for Troubled Cities" (Columbus, Ohio: Academy for Contemporary Problems, 1978).

[29] Carol S. Meyers, "Tax Effort Comparison" (Washington, D.C.: District of Columbia Department of Finance and Revenue, 1976).

Of course, an alternative to increasing tax rates is to expand the tax base, for example, by removing some form of tax exemption, such as a payroll tax on nonresidents, which in the case of the District is prohibited by national legislation. Another alternative is to pursue policies that cut public services and employment and increase government productivity. How far this will go is unknown. For even though one would expect, for example, that these services can be cut where population growth is slow, such as it has been in the District, the record shows instead that per capita expenditure is higher in declining cities than it is in growing cities.[30]

It has been projected that expenditures in education will be a major source of future increases in the cost of operating the District's government.[31] This cost may be expected to rise even if the school-age population continues to decline and proposed efficiency measures are adopted by the city government. These measures include school closings and staff reductions. Costs will rise because of (1) the necessity to maintain or replace obsolete plants; (2) increases in the cost of materials and personnel; and (3) general inflationary pressures. In this sense, the District is not unlike other cities and the Nation in general. Educational expenditures in the Nation have increased even in the face of declining enrollment. Unlike other cities, however, the District government will not be able to finance educational expenditures by greater reliance on State aid.

The evidence also indicates a favorable attitude about the city. There is evidence of growth in the young, white population. A recent Business Week survey indicated that the District is one of the few large cities in which construction of office space has resumed.[32] Office occupancy rates are high and the housing market is one of the most vibrant.

The District continues to have an unemployment rate that is less than that of many cities, and the government sector continues to give some underlying stability to the economy. New retailing outlets continue to be constructed. The Metro transportation system continues under construction and is increasingly being used. The tourist trade is alive and well. These are positive signs.

Finally, it should be noted that although Proposition 13 was popular in California and similar movements have been born throughout the country, such a movement may not be popular within the District of Columbia. First, the District recently lost a lawsuit and was forced to reduce property taxes that had been illegally increased. Second, well before Proposition 13, and independently of the lawsuit, District officials proposed various ways of reducing property taxes. Some of these cuts have been implemented. Third, as this article has pointed out, the District has a relatively low dependence on property taxes, unlike American cities as a whole and most cities its size. Fourth,

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[30] See George Peterson, "Finance," in William Gorham and Nathan Glazer, eds., "The Urban Predicament (Washington, D.C.: Urban Institute, 1976), pp. 35–114; and Thomas Muller, "Growing and Declining Urban Areas: A Fiscal Comparison" (Washington, D.C.: Urban Institute, 1975).

[31] Comer Coppie, "Fiscal and Program Profile of the District" (Washington, D.C.: District of Columbia Budget Office, 1976).

[32] "Those Empty Offices Begin to Show Up Again," Business Week, March 28, 1977, p. 22. This article claims that the District's downtown is 99 percent rented, with Houston second with 98 percent. At least eight new buildings have been announced, with eight more anticipated.

the majority of the District's population is black; both its white and black populations are liberal and very dependent upon government and government-related employment. Such a popuation is not likely to find an action similar to Proposition 13 within its self-interest. Fifth, the cutting of local revenues implies increased State aid as occurred in California. The District has no State to turn to, and Congress and the President have made it clear that they are unwilling to finance revenue cuts at the local level in the District or elsewhere.

Note: The author wishes to express his thanks for the assistance of Phebe Barth, Barbara Buhl, Anne Forster, Virginia Kimler, Shirley Lee, Avra Rapton, Susanne Stahovec, and the staff of the District of Columbia Tax Commission.

UNEMPLOYMENT INSURANCE IN THE DISTRICT OF COLUMBIA

(By Vincent A. T. Cariello, District of Columbia Tax Revision Commission)

I. Introduction

The District of Columbia's Unemployment Insurance Trust Fund is in deficit status. As of April 1977, the District has had to borrow over $50 million from the Federal Government so that benefit payments to insured workers would continue. Over the past three years many employers have seen their Unemployment Insurance tax liabilities to the District increased by as much as 2600 percent.

It is the purpose of this paper to familiarize the members of the D.C. Tax Revision Commission, the business community and others with the joint Federal-State U.I. program, and assist the Commission with the formulation of recommendations.

Both Federal and District programs will be described. Additional information is provided to allow for comparisons with the fifty States. Particular attention is paid to the program in Maryland and Virginia.

Among the questions addressed by this paper are:

Was the recent rise in insured unemployment solely responsible for the drain on the District's Trust Fund?

Were other factors such as the U.I. tax rates, and benefit structure also to blame?

Are enforcement rules being carried out?

Are the present enforcement laws adequate?

II. Overview

Unemployment Insurance (U.I.) is a coordinated federal-state program designed to provide economic security for workers during temporary periods of unemployment. It is a component of the Social Security Program. Under U.I., workers who become unemployed are paid weekly cash benefits by the state for specified periods of time. The actual amount of cash benefits and the benefit collection period are determined by several factors such as length of time spent in the work force and the amount earned in wages and salaries. Those individuals entitled to receive U.I. benefits are referred to as "covered" or "insured" workers.

The federal-state unemployment insurance program is financed by the revenue generated by two taxes (or contributions, the term commonly used by states for U.I. taxes). Both the taxes are levied on

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employers. The first is imposed by the Federal government, and the revenues are deposited into three accounts:

1. Employment Security Administration Account (ESAA), which finances federal and state costs associated with administering the unemployment compensation program.

2. Extended Unemployment Compensation Account (EUCA), which pays for 50 percent of the benefits under the Extended Benefits (EB) program. It also financed the Federal Supplemental Benefits (FSB) program.[1]

3. Federal Unemployment Account (FUA), which provides interest free loans to states that cannot meet their benefit costs. If the loans are not repaid, the law requires that the federal tax on employers in the state be increased until they are repaid (unless the Secretary of Labor grants a waiver of this penalty increase).[2]

The other tax, which is levied by the states, is used solely to pay benefits to unemployed workers. As noted, the tax is imposed fully on employers in the District and in forty-seven states. However, in three states, Alaska, Alabama and New Jersey, employees are also required to contribute according to the individual states laws.[3]

Unemployment taxes are based on wages paid by an employer to employees.[4] An employer is subject to the District of Columbia's Unemployment Compensation Act if "he employs one or more individuals at any time."[5] There is no lower limit. If an employer is subject to the Federal Act then he is also subject to the District's Act. For a list of those *not* covered by either the District or Federal Acts see Attachment I.

The District and Federal Unemployment Insurance tax rates are levied on the first $4,200 of wages per covered employee. That is, the employer pays taxes on the first $4,200 paid in wages to each of his employees. Public Law 94–566 that takes effect January 1, 1978, will raise the wage base to $6,000 for both District and Federal tax purposes.

III. The Federal Program

Legal Origin

The Unemployment Insurance System was established with the passage of Title IX of the Social Security Act on August 14, 1935. On April 1, 1939, the tax provisions of Title IX were incorporated into the Internal Revenue Code and became known as the "Federal Unemployment Tax Act." Provisions regarding grants to states for U.I. administration appear as Title III of that act. Title IX also includes provisions that established the Unemployment Trust Fund in the Treasury of the United States. According to this law all contributions collected by the states must be deposited in the U.S. Treasury along with the federal tax collections.[6]

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[1] As of 4/1/77 FSB has been financed from Federal general revenues.

[2] "Unemployment Compensation: A Background Report," Background Paper #15, 12/8/76, CBO, p. 11.

[3] U.S. Department of Labor Statistics.

[4] According to the D.C. Unemployment Compensation Act, Wages are defined as "all remuneration paid for personal services, including commissions, bonuses, and the cash value of remuneration paid in a medium other than cash.

[5] Unemployment Insurance Reporter, Volume 3, Commerce Clearing House (hereafter CCH) 1976.

[6] The constitutionality of the federal unemployment tax was upheld by the United States Supreme Court in the case of *Charles C. Steward Machine Co.* v. *David*, 301 U.S. 548, decided May 24, 1937; Unemployment Insurance Reporter, Volume 1B CCH.

FEDERAL TAX RATES AND CREDITS

As mentioned above, the Federal Unemployment Insurance tax revenues are used to fund the administration of the program in the fifty states, Puerto Rico and the District of Columbia. The federal tax rates which have fluctuated somewhat since 1960, are as follows:

Calendar year:	*Federal rate (Percent)*
1960 (before)	3.0
1961	3.1
1962	3.5
1963	3.35
1964–69	3.1
1970–72	3.2
1973	3.28
1974–76	3.2
1977	3.4

The Federal tax rate (with a base of $4,200 per covered employee) was raised to 3.4% beginning in 1977 by the Unemployment Compensation Amendments of 1976. The increased tax rate was justified as necessary in order to fund the Extended Unemployment Compensation programs discussed below.[7]

Because employers are required to pay two unemployment insurance taxes, the federal government has devised two forms of tax credits which an employer may apply against his federal U.I. tax liability. These credits are designed to encourage compliance with the state U.I. taxes and to ease the burden on the actual tax payer—be it the employer who does the actual paying, or the employee, to whom, some have argued the tax is shifted.

The Normal Credit

The first of the two credits which an employer may apply against his federal U.I. tax liability is referred to as the "normal" credit. Under the normal credit an employer may subtract contributions paid into the state unemployment insurance fund from his federal tax liability. The amount of the credit is limited by law to 2.7 percent of total taxable wages. For example, if an employer has a state U.I. tax liability of 3. 1 percent of taxable wages, he pays the entire amount to the states' U.I. Trust Fund. However, because of the credit his Federal U.I. tax rate is only .7 percent (3.4 percent, which is the federal rate for 1977, minus the maximum allowable credit of 2.7 percent). Of course, to receive the maximum credit the employer must first be paying state U.I. taxes at a rate greater than or equal to 2.7 percent. The following example illustrates the mechanics of the normal credit:[8]

EXAMPLE I.—*The normal credit*

Given: Total taxable wages	$100,000
State U.I. tax liability (percent)	3.1
Federal U.I. tax rate (percent)	3.4
Max. Federal credit (percent)	2.7
Find: Total (Federal and State) tax liability:	
State U.I. tax liability 3.1 percent ($100,000)	$3,100
Federal U.I. tax liability $100,000 (3.4 percent to 2.7 percent)	700
Total tax liability	3,800

[7] The .2 percentage increase will remain in effect for as long as there is a deficit in the Extended Unemployment Account.

[8] The 3.1 percent State U.I. tax rate shown here is for illustrative purposes only, the D.C. maximum is 2.7 percent.

Clearly, the normal credit substantially reduces the effective rate of the federal tax below the nominal levels noted above.[9]

The Additional Credit

In order to promote stable employment, most states, including the District of Columbia, offer U.I. tax incentives to employers within their jurisdiction. These incentives come under the general heading of Experience Rating. Under an Experience Rating system an employer would be eligible for a lower state U.I. tax rate (lower than the maximum) depending upon the amount of benefits paid to the employer's former employees. This is opposed to a flat rate system where all employers pay the same rate regardless of their employment record. The two types of Experience Rating—Benefit Ratio and Reserve Ratio—will be discussed in detail below.

Under Experience Rating, it is possible for employers to secure state U.I. taxes at a rate below the 2.7 percent maximum allowed for the normal credit. The Additional Credit allows the employer to credit against his federal U.I. tax liability the difference between his actual state U.I. liability (if the rate is below 2.7 percent of taxable wages) and 2.7 percent of taxable wages. Consider the following example:

EXAMPLE II.—*The additional credit*

Given: Taxable wages	$100,000
Employer State tax rate due to experience rating (percent)	2.0
Federal U.I. tax rate (percent)	3.4
Find: Total tax liability:	
State U.I. tax liability	$2,000
Federal tax liability:	
Maximum (3.4 percent)	$3,400
Less normal credit (2 percent)	—2,000
Less additional credit (0.7 percent)	—700
Net Federal tax liability	700
Total tax liability	2,700

In order for an employer to qualify for the tax credits described above, the state (or states) within which he employs workers must have unemployment insurance laws approved by the U.S. Secretary of Labor (all 50 states and the District have met with approval). Among conditions which a state/local law must meet are:

1. Benefits must be paid through the state's employment offices.
2. All contributions must be deposited in the Unemployment Trust Fund of the United States Treasury.
3. Benefits may not be denied to a person for refusing work because: (a) the position offered is vacant due to strike, lockout or labor dispute; (b) wages or conditions are less than those prevailing in a similar location; (c) he or she is forced to join or resigns or refrains from joining a union.[10]

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[9] The normal credit was originally computed to be 90 percent of the former federal tax rate of 3 percent (90×3 percent=2.7 percent). It has remained at the 2.7 percent level.

[10] Unemployment Insurance Reporter, Volume 1B, CCH, p. 1150.

UNEMPLOYMENT PROGRAMS [11]

Three programs make up the spectrum of programs from which covered workers are entitled to receive benefits when unemployed. A brief description of each follows:

Regular program [12]

The Regular unemployment compensation program is the most familiar. In general, it is financed entirely from employer contributions. If federal loans are needed to supplement a state's reserve, the loans—interest free—are repaid from future receipts of employer contributions. In most states the regular program provides up to 26 weeks of benefits. However, in the District the program provides up to 34 weeks of benefits.[12a] The actual amount and duration of benefits are determined by the Unemployment Compensation Acts of the various states. (See Attachment II for formulation and duration formulas for the states.) In calendar year 1975, 12.2 million beneficiaries collected $12.1 billion for the nation.[13] In the District, for the same year, $87 million were paid in benefits—an increase of over 100% from the previous year.[14] In 1976, however, the D.C. benefits fell to $79 million.

Extended benefit program (EB)

The "extended benefit" program is "triggered on" when the *national* covered (or insured) unemployment rate reaches 4.5 percent.[15] Under this program, once an individual has exhausted 26 weeks of his/her entitlement (if less than 26 weeks) of regular benefits, he or she is entitled to Extended Benefits, at the same benefit amount, for half the number of weeks he/she collect U.I. under the regular program. This program is financed on a 50–50 (federal-state) basis. In 1976 approximately 3 million people received at least one payment.[16] Outlays in fiscal year 1976 for EB amounted to $2.98 billion.[17] In the District 19,373 persons received $11,818,015 in 1976.[18]

The EB program was most recently in effect since January 1975; however as of July 23, 1977, the national insured unemployment rate finally fell below the 4.5-percent level, thus "triggering off" the program.

Federal supplement benefits program

If covered unemployment in a specific state is between 5 percent and 5.9 percent, an individual is then entitled up to 13 weeks of FSB after he has exhausted both regular and EB (i.e. up to 26 weeks of regular + up to 13 weeks EB plus up to 13 weeks from FSB=52

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[11] This section is a summary of three sources: "Estimating Outlays for Unemployment Compensation Programs: 1976" by Robert Black and Cyrus Karr; Handbook of Public Income Transfer Programs: 1975, Joint Economic Committee, and a CBO staff working paper on unemployment compensation.

[12] Federal and State U.I. tax contributions are deposited into the Unemployment Trust Fund in the U.S. Treasury. Therefore these programs are financed directly from those receipts.

[12a] Not everyone receives 34 weeks. For a more complete explanation see section on benefits.

[13] U.S. Department of Labor: Unemployment Insurance Service.

[14] Fortieth Annual Report, District Unemployment Compensation Board, for year 1975; 1976.

[15] "Triggered" is used to designate the commencement or cessation of additional benefit programs which supplement regular U.I.

[16] U.S. Department of Labor; Unemployment Insurance Service.

[17] *Ibid.*

[18] Office of Statistics and Research, D.C. Unemployment Compensation Board.

weeks of total benefits). And if the covered unemployment rate is 6 percent or in the state high FSB will carry for an additional period of up to 13 weeks (for a potential of 26 weeks of FSB and 65 weeks for total benefits). Persons qualifying for FSB would continue to receive the same dollar benefit amounts as under the regular and EB programs. FSB, though previously slated to expire in fiscal year 1977, has been extended through fiscal year 1978. The program is now funded by federal general revenues.

In 1976 approximately 2.3 million people received at least one FSB benefit check.[19] In fiscal year 1976 benefits paid under FSB were $3.37 billion.[20] In the District 3,631 persons received $9.1 million under the FSB program which was cancelled as of April 1976 because the covered unemployment rate was below the required minimum.[21]

FEDERAL UNEMPLOYMENT BENEFIT ALLOWANCE ACCOUNT

The following two programs are financed out of Federal general revenues and are designed to include those individuals who would not normally qualify for the regular program.

Special Unemployment Assistance (SUA)

This program provides assistance for those unemployed workers who are not eligible for any other type of unemployment compensation. State and local government workers, domestics and farm workers make up SUA's major recipients. The maximum duration of benefits is 39 weeks. In 1976 approximately 1.1 million persons received at least one benefit payment from the SUA program.[22] In fiscal year 1976 total SUA benefits amounted to $906 million.[23] In the District 1,479 persons received $1.34 million in 1976 under the SUA program.[24]

Unemployment Compensation for Federal Civilian Employees and Ex-Servicemen (UCFEX)

These two combined programs were added in 1954 and 1959 respectively. UCFEX provides up to 26 weeks of benefits, the amount of which is determined according to state law.

The chart (p. 351) illustrates the basic elements of the major programs discussed above.

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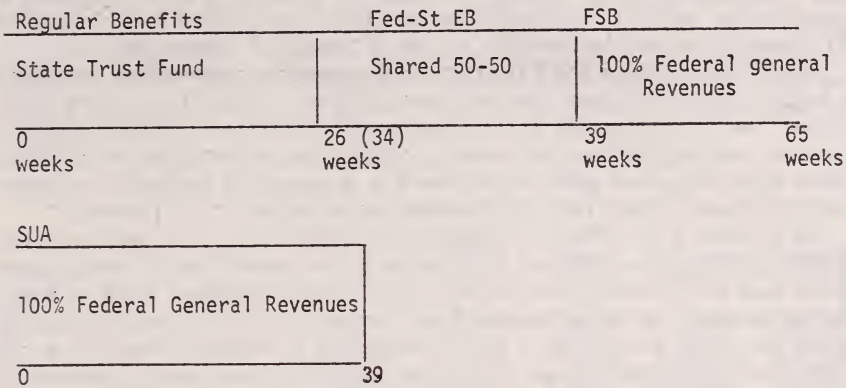
[19] Same as footnote 17.
[20] Ibid.
[21] Same as footnote 16.
[22] Same as footnote 20.
[23] Ibid.
[24] Same as footnote 18.

DURATION OF BENEFITS UNDER PERMANENT AND TEMPORARY UNEMPLOYMENT PROGRAMS*



* Dept. of Labor, Manpower Administration 9/75 changed to reflect District's Regular Benefits Program.

IV. THE DISTRICT OF COLUMBIA UNEMPLOYMENT COMPENSATION PROGRAM

ADMINISTRATION [25]

The unemployment compensation program in the District of Columbia is administered by the District Unemployment Compensation Board (DUCB) in accordance with the provisions of the District of Columbia Unemployment Compensation Act. The Board is composed of the Mayor and one representative each for employees and employers. In general, the Board determines tax rates, collects contributions (taxes) and oversees payment of benefits to claimants.

REVIEW OF THE PAST SEVERAL YEARS

Insured unemployment claims in the District increased significantly during 1975. Several strikes of long duration in both the construction and manufacturing industries compounded by continued recession in 1975 impacted on the local economy and contributed to the increased insured unemployment. Hardest hit was the construction industry which experienced a 19.5-percent decline in employment which represented 72 percent of the total reduction in employment in 1975. Other industries witnessing a decline in employment are: transportation, communications, public utilities, finance, insurance, real estate and manufacturing.[26]

The Federal Supplemental Benefits Program played a major role in increasing the overall claim load in 1975.[27] This legislation made it possible for eligible claimants to receive up to 65 weeks of unemployment insurance consisting of up to 39 weeks of combined benefits under the Regular and Extended Benefit (EB) Programs, plus up to 26

[25] The following two sections represent a synopsis from selected sections of the Fortieth Annual Report: For the Year 1975, District Unemployment Compensation Board.
[26] Annual Planning Report, District of Columbia FY 1977, District of Columbia, Dept. of Manpower, June 1976.
[27] The program was implemented under the Emergency Unemployment Compensation Act of 1974, P.L. 93–572, amended by P.L. 94–12.

weeks under the Federal Supplemental Benefit Program (FSB). Special Unemployment Assistance (SUA)—Public Law 93–567—made it possible for certain claimants not covered or eligible for the Regular Program to collect benefits for up to 39 weeks of unemployment.

The Federal-State EB program is triggered into operation by either a high state or national insured unemployment rate. To achieve a national "on" trigger, each of the three most recently completed calendar months, ending before the week in which the determination is made, must have attained and maintained a seasonably adjusted national insured unemployed rate of greater than or equal to 4.5 percent.[28]

To achieve a District 'on' trigger, regardless of the national rate, the week in which the decision is made and the preceding 12 weeks must have had an insured unemployment rate that is greater than or equal to 120 percent of the average of such rates for the corresponding 13-week period ending in each of the preceding 2 calendar years. In addition, the local insured unemployment rate must be at least 4 percent.

When EB is determined to be operational in the District it begins during the 27th week of unemployment. Thus, weeks 27 through 34 are paid half from the District's Trust Fund and half from the Federal government, rather than entirely by the District as would be the case when EB is not operational.

Nationally, the EB program is discontinued any week for which the preceeding 3 months had a national insured unemployment rate below 4.5 percent. Similarly, the EB program in the District is discontinued when the insured unemployment rate here is below 4 percent. Extended benefits cannot be triggered on again before the 14th week following the end of a prior EB period.

In 1976 insured unemployment claims activity in the District decreased for the first time since 1973.[29] Insured unemployment dropped to 3.7 percent and has fluctuated very little since. As a result of the decrease in insured unemployment, the Federal Supplemental Benefits Program for the District was phased out as of April 3, 1976.

THE DISTRICT'S UNEMPLOYMENT COMPENSATION TRUST FUND (DUCB)

Title IX of the Federal Unemployment Tax Act (1936) established the unemployment Trust Fund in the Treasury of the United States. All contributions collected by the states and the District of Columbia must be deposited in the U.S. Treasury along with the Federal tax collections.

The chart on page 353 shows the flow of benefits from 1936 to 1975 due to unemployment compensation claims and its effect on the District's Trust Fund. The vertical axis measures the Accumulated Trust Fund Balance in millions of dollars at the end of each calendar year. On December 21, 1969, the balance was at its highest level—$74.5 million. In contrast, the balance by December 31, 1975, was at a low of $866,000 (refer to Table I, p. 353). In reality, the balance would have shown a deficit had it not been for $7.0 million in advances to the Trust Fund account by the Federal unemployment Account during 1975.[30]

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[28] Unemployment Insurance Reporter, Volume 1B, CCH.
[29] Forty-first Annual Report, For the Year 1976 DUCB.
[30] Fortieth Annual Report: For the Year 1975, District Unemployment Compensation Board, 1976.

On December 31, 1974, the balance was $34.9 million. During 1975, contributions from District employers amounted to $44.6 million. To this amount $1.4 million in interest was added, bringing the total for 1975 to $45.9. During the same period $87 million was paid out in benefit checks. Thus withdrawals for benefits not only depleted total deposits, the entire beginning balance had to be liquidated as well. The Federal advances were necessary to allow the Trust Fund to meet its obligations.

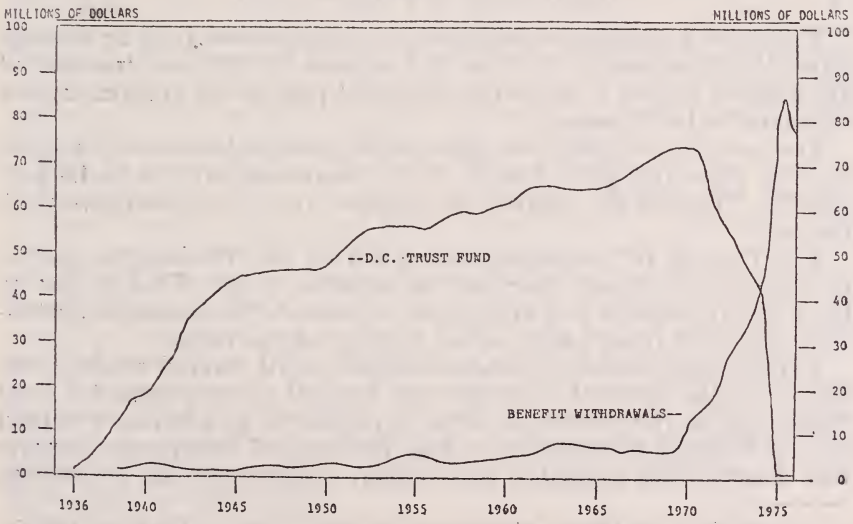
TABLE I.—STATUS OF UNEMPLOYMENT TRUST FUND, BY YEARS

Period	Deposits in fund			Withdrawals for benefits [2]	Balance at end of period
	Total	Contributions and other deposits [1]	Interest on fund		
1966	$11, 648, 701	$9, 262, 362	$2, 386, 339	$7, 765, 000	$68, 066, 581
1967	11, 269, 006	8, 566, 754	2, 702, 252	8, 200, 000	71, 135, 592
1968	10, 568, 961	7, 643, 898	2, 925, 063	8, 820, 000	72, 884, 551
1969	10, 709, 449	7, 481, 841	3, 227, 608	9, 055, 000	74, 539, 000
1970	12, 274, 909	8, 680, 915	3, 593, 994	14, 635, 000	72, 178, 918
1971	11, 990, 638	8, 376, 610	3, 614, 028	20, 177, 000	63, 992, 549
1972	18, 448, 741	15, 383, 375	3, 065, 366	25, 700, 000	56, 741, 288
1973	20, 059, 938	17, 292, 314	2, 767, 624	30, 131, 039	46, 670, 181
1974	25, 863, 713	23, 268, 080	2, 595, 633	37, 657, 000	34, 876, 901
1975	52, 987, 677	[3] 51, 624, 049	1, 363, 628	86, 998, 000	866, 578
1976	79, 626, 679	[4] 76, 402, 542	244, 137	78, 738, 000	1, 755, 257

[1] Includes interest on delinquent contribution payments, fine collection, repayments of amounts advanced to servicemen's readjustment allowance account, and excess tax collections credited under section 903(a) of the Social Security Act, as amended.
[2] Includes amounts advanced to the servicemen's readjustment allowance account.
[3] Includes $7,000,000 advanced to reserve fund account.
[4] Includes $26,600,000 advanced to reserve fund account.

Source: DUCB 41st Annual Report: For the year 1976.

CHART I.—Comparison of trust fund balance and benefit withdrawal over the years.*



* Source: Staff compilations.

In 1976, the District had to borrow an additional $26.6 million from the Federal Unemployment Account in order to meet the demand for benefit payments. As of April 1977, total DUCB loans from the Federal Account amounted to $52.4 million. Table II provides an accounting of all Federal loans, by month, since November 1975—the month of the first loan.

TABLE II.—DUCB LOANS FROM FEDERAL UNEMPLOYMENT ACCOUNT

Month	Monthly amount	Cumulative amount	Month	Monthly amount	Cumulative amount
November	$1,000,000	$1,000,000	1977		
December	6,000,000	7,000,000	January	$5,500,000	$39,100,000
1976			February	4,300,000	43,400,000
January	5,600,000	12,600,000	March	6,000,000	49,400,000
February	5,000,000	17,600,000	April	3,000,000	52,400,000
March	5,000,000	22,600,000	May		
April	3,000,000	25,600,000	June		
May	4,000,000	29,600,000	July		
June	0	29,600,000	August		
July	0	29,600,000	September		
August	0	29,600,000	October		
September	0	29,600,000	November		
October	0	29,600,000	December		
November	1,000,000	30,600,000			
December	3,000,000	33,600,000			

Source: Reports and Analysis Department, DUCB, June 1977.

The chart on page 353 demonstrates that during the recent period of rapid and sustained unemployment the Trust Fund was unable to cope with the demand for benefits. Not since its inception has the District's Unemployment Trust Fund had to face insolvency. That is, not until 1975.

THE INSURED UNEMPLOYED RATE

The insured unemployment rate in the District rose from an average rate of 2.31 percent in 1974 to 4.14 percent in 1975—an increase of 179 percent in just 1 year. However, that rate in the District is now calculated to be 3.7 percent.[31]

The insured unemployment rate in Maryland had risen to 5.3 percent in 1975. However, as of June 4, 1977, it was computed to be 4.4 percent. In Virginia the insured unemployed rate is approximately 2.8 percent.[32]

The District of Columbia, and much of the Washington metropolitan area, has been described as recession proof. That is, due to the Federal presence this area is not as prone to the economic fluctuations which at times plague other sections of the nation.

Thirty-eight percent (or about 220,000) of all covered workers employed in the District work for the Federal Government. Of total wages paid in the District in 1975, 47 percent or $3.5 billion was paid by the Federal Government.[33] The Division of Manpower Reports and Analysis has estimated that federal employment has an average

[31] As reported by the Office of Research and Statistics, District of Columbia Unemployment Compensation Board.
[32] From the respective U.I. offices of the two states.
[33] Office of Statistics and Research; Unemployment Compensation Board.

"multiplier effect" of 2.1 in non-agricultural employment.[34] That is, every job in the federal government causes a corresponding 2.1 jobs in the private sector. In 1975, there was an increase in federal employment of 7,700 which (due to multiplier) caused roughly 16,200 in additional jobs in the Washington Metropolitan area.[35] It is suspected that northern Virginia reaps the greatest advantage from the Federal presence. First of all the state's Department of Labor reports that state wide insured unemployment is 2.8 percent. In addition, department officials suspect that the rate is lower in the northern part of the state. This however, cannot be confirmed because only state wide statistics are maintained. Be it as it may, at its worst, the 4.14 percent insured unemployment rate for the District never approached the 7 percent and higher insured unemployment rates faced by many other urban centers.

U.I. TAX RATES

The absolute maximum tax rate in the District is 2.7 percent with a base of $4,200 per employee. The District's tax rate and base corresponds to the minimum levels—in both cases—allowed by Federal regulations for the whole United States.[36] The range for absolute maximums is from 2.7 percent to 6.6 percent (Michigan). The tax base ranges from $4,200 per employee to $10,000 per employee (Alaska). Table III, page 356, presents a comparison of the tax rates and tax bases for the 50 states and the District of Columbia.

Comparing the tax rates in the Washington Metropolitan area (Washington, Md. & Va. have the same tax base), note that the minimum to maximum ranges are: Maryland 0.1 percent to 3.6 percent; Virginia .05 percent to 2.7 percent; District 0.1 percent to 2.7 percent. However, due to increases in insured unemployment and the consequent drain on the Trust Funds, Maryland has imposed a 2.7-percent surtax making its minimum rate 2.8 percent (the maximum remains at 3.6 percent). In the District all employers are paying the 2.7-percent legal maximum. Virginia has installed a 0.8-percent surtax. However, 50,325 out of 74,189 employers—or 75 percent—in Virginia are paying the minimum 0.85-percent U.I. tax.

Making use of the normal credit, District employers have thus far been confronted with a maximum combined (District and Federal) U.I. tax liability equal to the federal gross rate of 3.4 percent. Under the present tax system, the only time a District employer can expect to pay at a rate greater than the gross federal rate is when the Federal loans (discussed above) to the District's Trust Fund have been outstanding for more than 2 years. If 2 years go by and these loans (totaling more than $44 million) have not been repaid .3 percent will be deducted from the Federal tax credit the first year and .3 percent each subsequent year until all outstanding advances have been repaid. There is at present some disagreement between the U.S. Department of Labor and the various states' unemployment offices as to when these loans become due.

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[34] Annual Planning Report, District of Columbia FY 1977, District of Columbia Department of Manpower, 1976.

[35] Ibid.

[36] "Unemployment Compensation: A Background Report," Background Paper #15, CBO, 12/8/76, p. 8.

TABLE III.—EMPLOYER TAX RATES AS OF JAN. 1, 1977

(Percent)

	Maximum negative balance [1]	Maximum positive balance [2]	Minimum positive balance	Absolute minimum	Wage base if other than $4,200 per employee
Alabama	4.0	4.0	0.5	0.5	4,800
Alaska	4.8	4.8	2.3	.6	10,000
Arizona	3.6	3.35	.1	.1	6,000
Arkansas	4.4	3.1	.5	0	5,400
California	4.9	4.5	1.4	.1	7,000
Colorado	3.6	2.7	1.8	0	----------
Connecticut	6.0	6.0	1.5	.1	6,000
Delaware	4.5	4.5	1.6	.1	----------
District of Columbia	2.7	2.7	2.7	.1	----------
Florida	4.5	4.5	1.1	0	----------
Georgia	4.7	3.02	.006	.001	6,000
Hawaii	3.5	3.5	3.5	0	9,300
Idaho	4.0	2.7	.9	.2	8,400
Illinois	4.0	4.0	.1	.1	----------
Indiana	3.3	2.9	.3	.2	----------
Iowa	4.9	3.6	.9	0	6,000
Kansas	3.6	3.6	0	0	----------
Kentucky	4.2	2.7	2.7	.1	----------
Louisiana	3.0	3.0	.4	.1	----------
Maine	5.0	4.7	2.4	.5	----------
Maryland	3.6	3.6	2.8	.1	----------
Massachusetts	5.1	4.7	3.9	.5	----------
Michigan	6.6	4.6	.8	0	5,400
Minnesota	7.5	7.5	1.0	.1	7,000
Mississippi	2.7	2.7	2.1	0	----------
Missouri	4.1	3.2	.5	0	4,500
Montana	3.1	3.1	3.1	.5	4,800
Nebraska	3.7	2.7	.1	(3)	4,200
Nevada	3.5	3.5	1.1	.6	6,500
New Hampshire	4.0	2.2	.15	.075	----------
New Jersey	6.2	4.1	1.2	.4	5,800
New Mexico	4.2	3.6	.6	.1	6,000
New York	5.2	4.1	1.5	.3	----------
North Carolina	4.7	2.7	.5	.1	----------
North Dakota	5.0	4.1	1.2	.4	5,000
Ohio	4.8	4.6	1.1	0	----------
Oklahoma	2.7	2.7	2.2	.2	----------
Oregon	4.0	4.0	2.6	1.2	8,000
Pennsylvania	4.0	4.0	1.0	.3	----------
Puerto Rico	3.45	3.45	2.95	2.95	----------
Rhode Island	5.0	4.5	3.2	1.0	4,000
South Carolina	4.1	2.7	1.3	.25	----------
South Dakota	2.7	2.7	0	0	----------
Tennessee	4.0	2.7	.4	.3	----------
Texas	4.2	4.2	.3	.1	----------
Utah	2.9	2.9	1.5	.5	8,800
Vermont	5.6	5.6	1.6	.1	6,000
Virginia	2.7	2.7	.85	.05	----------
Washington	3.0	3.0	3.0	>0	7,000
West Virginia	3.3	2.7	.3	0	----------
Wisconsin	5.7	4.2	.5	0	6,000
Wyoming	4.17	4.17	1.47	>0	----------

[1] Negative balance means that benefits paid to an employer's former employees exceed the contributions made to the trust fund by the employer.

[2] Positive balance means that contributions paid by an employer to the trust fund exceed benefits paid to his former employees. A fuller explanation is offered later in the paper.

[3] Varies.

Source: CCH, Unemployment Insurance Reporter, vol. 1B.

New employers in the District are required to pay at a rate equal to the average rate paid by all employers in the District during the preceding year or 1 percent whichever is higher. During the first half of 1975 new employers were paying 1.3 percent. For the latter half of 1975 and for all of 1976 and 1977 this rate was and is 2.7 percent. At no time, according to the District's Unemployment Act, can the rate go above 2.7 percent for any employer. As of June 1977, new employers in Maryland and Virginia are paying 2.4 percent and 1.8 percent respectively.

In addition to the maximum and minimum U.I. taxes given in Table III, Table IV below shows U.I. taxes as a percent of total wages for the years 1974 through 1976. Through the District's maximum rate of 2.7 percent was in effect for all of 1976, the average effective rate was only 1 percent of all wages in covered employment. In Maryland and Virginia the comparable rates were 1 percent and 0.6 percent respectively.

TABLE IV.—AVERAGE EMPLOYER CONTRIBUTION RATES, BY STATE, CALENDAR YEARS 1974–76

[Rates shown as percentage of taxable and total wages]

State	Tax base $4,200 except as shown	Date	1976, estimated [1]		1975, estmated [1]		1974, actual [1]	
			Taxable	Total	Taxable	Total	Taxable	Total
Total			2.5	1.2	2.0	0.9	1.91	0.90
Alabama	$4,800	January 1976	1.8	1.0	[2] 1.0	[2] .5	1.08	.55
Alaska	10,000	January 1974	3.7	2.6	3.0	2.1	[2] 2.60	[2] 1.86
Arizona			1.9	.9	1.4	.7	1.40	.70
Arkansas			1.8	1.0	[2] 1.6	[2] .9	1.50	.86
California	7,000	January 1976	3.6	2.1	3.1	[2] 1.3	[2] 2.66	[2] 1.22
Colorado			1.9	.9	.5	[2] .2	.39	.19
Connecticut	[3] 6,000	January 1975	3.0	1.6	[2] 2.7	[2] 1.5	2.36	[2] 1.23
Delaware			2.5	1.1	2.2	1.0	2.35	.99
District of Columbia			2.7	1.0	[2] 1.4	[2] .6	1.33	.57
Florida			2.1	1.0	1.1	.5	.69	[2] .38
Georgia	6,000	January 1976	1.8	1.2	[2] .9	[2] .4	.88	.47
Hawaii	7,800	do	3.0	2.0	[2] 2.6	[2] 1.8	1.90	1.30
Idaho	7,800	do	1.7	1.2	2.3	1.2	2.30	[2] 1.20
Illinois			1.9	.8	1.1	.5	1.87	[2] .31
Indiana			1.8	.8	1.1	.5	[2] 1.10	.47
Iowa	6,000	January 1976	2.3	1.4	1.1	[2] .5	.98	.47
Kansas			2.3	1.1	[2] 2.2	1.1	2.02	[2] 1.04
Kentucky			2.5	1.2	1.5	.8	[2] 2.10	[2] 1.10
Louisiana			1.9	1.0	[2] 2.1	[2] 1.1	[2] 1.49	[2] .83
Maine			3.1	1.6	2.8	[2] 1.5	[2] 2.60	1.48
Maryland			2.0	1.0	[2] 1.3	[2] .6	1.83	.86
Massachusetts			4.1	1.8	[2] 3.8	[2] 1.7	3.45	[2] 1.63
Michigan	5,400	January 1976	3.7	1.9	2.8	[2] 1.1	[2] 2.53	[2] 1.02
Minnesota	6,200	do	1.8	1.0	[2] 1.7	[2] .8	[2] 1.78	.86
Mississippi			2.2	1.2	[2] .8	[2] .4	1.20	.70
Missouri	4,500	January 1976	2.8	1.2	1.6	.7	1.63	.72
Montana	4,800	April 1975	2.2	1.2	[2] 1.8	.9	1.70	.90
Nebraska			2.6	1.2	[2] 1.1	[2] .5	1.17	.57
Nevada	6,100	January 1976	3.2	2.1	[2] 2.6	[2] 1.5	2.76	1.45
New Hampshire			2.5	1.2	[2] 1.8	[2] .9	1.33	.68
New Jersey	5,400	January 1976	3.4	1.7	[2] 3.2	[2] 1.4	3.47	1.48
New Mexico			1.9	1.0	[2] 1.9	[2] 1.0	1.60	.87
New York			3.5	1.3	[2] 2.9	1.2	2.86	1.21
North Carolina			1.4	.6	1.1	.6	1.10	[2] .54
North Dakota			2.2	1.0	[2] 2.2	1.0	2.20	[2] 1.0
Ohio			2.3	1.0	1.3	.6	[2] 1.37	.60
Oklahoma			1.7	.8	[2] 1.2	[2] .6	1.20	.60
Oregon	7,000	January 1976	3.3	2.1	2.0	1.0	[2] 2.05	1.13
Pennsylvania			2.9	1.1	[2] 2.7	[2] 1.1	[2] 2.54	1.06
Puerto Rico [4]			3.0	3.0	3.0	3.0	[2] 2.83	[2] 2.67
Rhode Island	4,800	January 1975	3.9	2.0	3.9	[2] 2.1	[2] 2.92	[2] 1.50
South Carolina			2.1	1.1	[2] .9	.5	1.04	.70
South Dakota			1.0	.6	[2] .8	[2] .4	.87	.49
Tennessee			1.6	.8	[2] 1.6	[2] .8	1.61	.82
Texas			.6	.3	.4	.2	.40	.20
Utah	6,000	January 1976	1.7	1.0	1.7	.8	1.70	.86
Vermont			2.3	1.2	[2] 2.3	1.2	2.19	1.19
Virginia			1.2	.6	.3	[2] .1	[2] .33	.17
Washington	7,200	January 1976	3.0	1.8	3.0	1.8	3.00	1.76
West Virginia			1.9	.8	[2] 1.2	.5	[2] 1.20	[2] .50
Wisconsin			2.1	1.0	[2] 1.7	[2] .7	[2] 1.52	[2] .07
Wyoming			2.2	1.0	1.7	.8	1.10	.60

[1] State estimated and actual rates were furnished by State employment security agencies.
[2] Revised by State agency.
[3] Wage base of 6,000 was approved July 1, 1975 with retroactive date of Jan. 1, 1975.
[4] Total wages paid to an individual are taxable, effective July 1, 1974.

Source: U.S. Department of Labor Statistics.

Experience Rating

Experience Rating is considered by most D.C. employers to be one incentive for maintaining stable employment. According to the District's experience rating system, if an employer's contributions to the Trust Fund since May 31, 1939, have been greater than benefits paid (both contributions and benefits to former employees are credited to or charged against an employer's account) since June 30, 1939, his contributions for a calendar year are determined by the ratio of such an excess to his average annual payroll for the last 3 twelve month periods ending on March 31. The ratio is first computed and then related to the prescribed range of tax rates. This system results in the following schedule:[37]

The rate is 2.7 percent if the excess $<$ .5 percent.

The rate is 2.0 percent if the excess $\geqq$ .5 but $<$1 percent.

The rate is 1.5 percent if the excess $\geqq$1.0 percent but $<$1.5 percent.

The rate is 1.0 percent if the excess $\geqq$1.5 percent but $<$2.5 percent.

The rate is 1.0 percent if the excess $\geqq$ 2.5 percent but $<$3 percent.

The rate is .1 percent if the excess $\geqq$ 3 percent of average.

Due to the present D.C. Trust Fund crisis, however, all District employers are paying at the rate equal to the legal ceiling—2.7 percent. This is because the Trust Fund has been sustained through Federal loans. Virginia follows a rating procedure similar to the one in the District though there are many more tax rate steps (see findings).

The state of Maryland uses a system known as Benefit Ratio in determining what rates are assigned to the various employers. An employer's U.I. tax rate, under this system, is computed to be the quotient of the benefits paid and charged to the employer's account during the previous calendar year—divided by his taxable wages for the same calendar—applied to a chart designed to reflect the employer's experience rating, i.e. benefits divided by taxable wages (the quotient of which is applied to the tax chart)=the employer's tax rate. This year all Maryland employers are paying a 2.7-percent surtax due to the deficit status of Maryland's Trust Fund. However, the maximum tax rate remains at 3.6 percent.

According to the District's Unemployment Compensation Act, the amount of money in the Trust Fund on any June 30 must be at least 4 percent of all taxable payrolls for 12 months ending on the preceding thirty-first of December. If the above mentioned rate is below 4 percent then each employer's U.I. tax rate is increased (irregardless of individually acquired experience rate) by the difference be-

[37] Unemployment Insurance Reporter, Volume 1B, CCH.

tween the mandatory rate and the employer's actual rate. Consider the following example:

Current annual taxable payroll	$1,000,000,000
Reserve fund (June 30, 197–):	
Amount	$15,000,000
Percent of payroll	1.5
Required amount (by act)	$40,000,000
Percent of payroll	4.0
Excess of requirements:	
Amount	$(25,000,000)
Percent of payroll	2.5

According to the example the Trust (or Reserve Fund) is too low by an amount equal to 2.5 percent of the previous year's taxable payroll. Therefore according to the act all employers would have their rates increased by an additional 2.5 percentage points—a situation not unlike what actually happened in 1975.

Voluntary Contributions

According to the District of Columbia Unemployment Compensation Act, amended in 1962, employers are permitted to make voluntary contributions to the Trust Fund. These voluntary contributions are permitted in addition to the employer's normal U.I. tax liabilities. By making a contribution in this manner an employer can increase the reserve in his account thus making it possible for him to be eligible for lower tax rates through the experience rating system. All contributions (mandatory or voluntary) are a cost of doing business and therefore deductible on corporate or unincorporated income taxes.

BENEFITS

Current treatment

The benefit amount for an individual is based on his earnings prior to his filing a claim. All computations are based upon wages earned in the base period. The base period is the first four of the last five completed calendar quarters preceding the first day of the claimant's benefit year. The benefit year is the 52 (consecutive) week period beginning with the first day a claimant files a valid claim.[38]

The maximum weekly benefit amount (WBA) in the District is determined annually at 66⅔ of the average weekly wage paid for insured work.[39] This computation method was begun in 1972. Until that time the weekly benefit amount had been 50 percent of average weekly wage for insured work. The average weekly wage for the District in 1976 was $221, thus the maximum weekly benefit in 1977 is $148. An individual's WBA is determined to be the less of 66⅔ of his/her average weekly earnings in covered work or, 1/23 times his/her earnings the highest quarter. The total amount of benefits that an individual may collect in his benefit year is the smaller of 34 times his WBA or 50 percent of his base-period wage.

[38] Two sources: Unemployment Insurance Reporter, Volume 1B, CCH, 1976; Office of Statistics and Research, District Unemployment Compensation Board.
[39] Ibid..

To be eligible to collect under the regular program the claimant must have earned at least $300 in one quarter of his base period. In addition, in two quarters of his base period the claimant must have earned at least $450, and his total base period wages must be greater than or equal to 1½ times the wages of his highest quarter.[40]

The maximum weekly benefit amount in 1976 was $89 and $103 in Maryland and Virginia, respectively. Calculations are based upon highest quarterly wages (hqw). In Maryland the weekly benefit amount is 1/24 hqw, for Virginia it is 1/25 hqw.[41]

IS THERE A PROPER LEVEL AND DURATION FOR UNEMPLOYMENT INSURANCE

The aim of unemployment insurance is to provide economic security for workers during temporary periods of unemployment. The terms "economic security" and "temporary periods of unemployment" are at best ambiguious.

All states currently offer a maximum duration of payment period of up to at least 26 weeks. (The District offers up to 34 weeks.) The benefit level, however, varies from 50 percent to 66⅔ percent of the average weekly wage. Even if two states are both at the percentage maximum, however, this does not assure that they will pay the same dollar amount. This is due to the fact that average weekly wage (payments base) varies among the states. For example, both the District of Columbia and the state of Hawaii offer benefit amounts up to 66⅔ percent of the state's average weekly wage. However, there is a $28 per week difference in the weekly maximum amounts of the two states (D.C.—$148; Hawaii $120).[42]

Further, it is incorrect to assume that benefit payments of 66⅔ percent of one's average weekly wage (up to a specified amount) do in fact replace 66⅔ percent of lost income. Actually, most claimants find that their unemployment insurance check replaces much more than two-thirds of their lost net take-home pay. In fact, for some, Unemployment Insurance replaces almost all of that lost pay.

Consider a worker in the District with a wife and two children, who grosses $221 a week; has been working for the past year-and-a-half; and who is suddenly laid off. If he does not return to work for eleven weeks he has lost $2,431 in gross private wages. In fact, however, he has "lost" $951 in gross wages because during his time he has collected ten weeks of U.I. (given a one week waiting period). Then, once we take into account the fact that U.I. payments are tax free, we find that after taxes the same person is only $472.28 worse off in an eleven week period.[43] This $427.28 breaks down to $42.93 a week or $1.97 per hour in lost wages.

For a single individual, the results are even more startling. In an eleven week period he would have lost only $269.88 in net wages or $24.53 a week or $0.61 an hour.

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[40] Unemployment Insurance Reporter, Volume 1B, CCH.

[41] Information provided by the Unemployment Insurance Office of the respective states.

[42] As recently as 10 years ago most states restricted the maximum weekly benefit amount to 50 percent of average weekly wage in the state. Many states have since increased their benefit formulas. They did so primarily because of the belief that 50 percent of one's average weekly wage did not provide an adequate level of income between jobs. The District incorporated the 66⅔ percent formulation in 1972.

[43] Federal and District income taxes and Social Security Deductions.

It would not be difficult to hypothesize a situation in which individuals come out ahead by collecting unemployment insurance. For example a husband and wife who both work and whose total tax liability (Federal, state and Social Security) is greater than 33 percent of gross income (average or even at the margin) stand to come out ahead if the lower wage earner—about $12,000/year—is laid off. The tax liability of the unemployed spouse is zero even though he/she is collecting U.I. The tax liability of the working spouse is greatly reduced because total gross earnings have been reduced.

Disqualification

According to the District of Columbia Unemployment Compensation Act: [44]

An individual who has left his most recent work voluntarily without good cause, as determined by the Board under regulations prescribed by the D.C. Council, shall not be eligible for benefits with respect to the week in which such leaving occurred and with respect to not less than four nor more than nine consecutive weeks of unemployment which immediately follow such week, as determined by the Board in such case according to the seriousness of the case. In addition such individual's total benefit amount shall be reduced in a sum equal to the number of weeks of disqualification multiplied by the weekly benefit amount.

An individual who has been discharged for misconduct occuring in the course of his most recent work proved to the satisfaction of the Board shall not be eligible for benefits with respect to the week in which such discharge occurred and for not less than four or more than nine weeks of consecutive unemployment immediately following such week, as determined by the Board in such case according to the seriousness of the misconduct. In addition such individual's total benefit amount shall be reduced in a sum equal to the number of weeks of disqualification multiplied by his weekly benefit amount.

V. Findings

1. The District of Columbia and only nine other states offer maximum weekly benefit amounts (wba) equal to 66⅔ percent of the statewide weekly wage. However, all nine states have tax rates higher than the District's and three of them have a higher tax base. Refer to the table below: [45]

State	U.I. tax rate (percent)	Tax base per employee
District of Columbia	2.7	$4,200
Arkansas	4.4	5,400
Hawaii	3.5	9,300
Iowa	4.9	6,000
New Jersey	6.2	5,800
North Carolina	4.7	4,200
North Dakota	4.2	4,300
Pennsylvania	4.0	4,200
South Carolina	4.1	4,200
West Virginia	3.3	4,200

2. The District's benefit package is the highest in the Metropolitan area.[46] These figures are for 1976. In 1977 maximum wba in D.C. is $148.

[44] District of Columbia Unemployment Compensation Act, January 1, 1972, Section 10, a and b.
[45] Department of Labor Statistics.
[46] Ibid.

Jurisdiction	Maximum duration of benefits (weeks)	Maximum wba (1976)	How computed
District of Columbia	34	$139	66 2/3 percen aww.
Maryland	26	89	1/24 hqw. [1]
Virginia	26	103	1/25 hqw.

[1] Hqw—highest quarter wages.

3. Though the maximum wba in Md. is less than the District's, the tax rates in Md. are higher—minimum—2.8 percent, maximum—3.6 percent—(the minimum had been .1 percent but all employers are required to pay a surtax of 2.7 percent).

4. All District employers are paying the maximum U.I. tax of 2.7 percent. This is due to the fact that the lower tax rates normally available according to the experience rating system are not now in effect because of the Trust Fund's imbalance. This in turn has caused all employers' tax rates to climb to 2.7 percent.

5. As of June 1976, (the latest data available) nearly 30 percent of District employers (4895 out of a total of 16,748) were operating with a negative reserve in their accounts. A majority of the employees of these employers are in the construction industry.[47] Indeed, seventy-two percent (72%) of the total reduction in employment in 1975 was construction workers.[48]

6. As of April 30, 1977, total borrowing from the Federal Government to maintain solvency in the Trust Fund amounted to $52.4 million.

7. Forty-six states offer maximum U.I. tax rates higher than the District of Columbia (see p. 356).

8. Since 1968 withdrawals for benefits have been greater than contributions paid to the Trust Funds (see p. 353).

9. All employers currently paying U.I. taxes at the 2.7 percent rate, but who through experience rating have actually earned a lower rate, are building reserves in their accounts.

10. Advances from the Federal government to a state trust fund outstanding longer than two years precipitate a reduction in the maximum credit for Federal U.I. taxes of .3 percent per year until the advances are repaid. There is, however, a dispute between the Labor Department and the various state unemployment compensation boards as to when the 2 years expire. Therefore, loans will become repayable in 1980.

11. In 1973 the District's Trust Fund reserve per covered employee ($80) was the fifth lowest in the United States. All four states with fund reserves per covered employee lower than the District (Conn., N.J., Vermont, and the state of Washington) had already developed deficits, as had Rhode Island, the sixth lowest (Table V).

12. As indicated in Table V, in 1973 only three states collected less taxes per covered employee than did the District. Findings 11 and 12 show that the District of Columbia was not prepared to cope with the eventual increase in the unemployment rate.

13. A voluntary quit without good cause disqualifies an individual from collecting benefits for 5 to 10 weeks. However, according to the

[47] Office of Statistics and Research, D.C. Unemployment Compensation Board.
[48] Annual Planning Report District of Columbia FY 1977, p. 20, District of Columbia Department of Manpower, June 1976.

District's law, the claimant would then still be eligible to collect benefits for up to 24 to 29 weeks.

14. Termination for gross misconduct disqualifies an individual from colelcting benefits for 5 to 10 weeks. However, according to the District's U.I. laws, the claimant would then still be eligible to collect benefits for up to 24 to 29 weeks.

15. The period of partial disqualification begins from the date of separation and not on the day the claim is filed.

TABLE V.—UNEMPLOYMENT COMPENSATION TAX AND EMPLOYEE DATA, 50 STATES, 1973 DATA

	Total unemployment compensation taxes collected (thousands)	Fund reserves [1] (thousands)	Average monthly covered employment	Taxes collected per covered employee	Fund reserve per covered employee
Alabama	$39,225	$122,888	$858,642	$46	$143
Alaska	18,129	42,067	67,362	269	624
Arizona	31,717	153,965	587,400	54	262
Arkansas	28,835	63,468	481,176	60	132
California	781,421	1,214,457	5,820,538	134	209
Colorado	13,771	115,636	694,079	20	167
Connecticut [2]	114,163	40,846	994,499	115	41
Delaware	19,929	38,901	186,799	107	208
District of Columbia [3]	17,292	46,670	579,900	30	80
Florida	64,483	344,008	2,278,057	28	151
Georgia	58,966	488,591	1,387,461	42	323
Hawaii [4]	24,642	25,307	246,201	100	103
Idaho	15,361	54,118	178,831	86	303
Illinois	322,968	423,769	3,434,000	94	123
Indiana	78,940	378,667	1,603,000	49	236
Iowa	31,443	120,490	715,738	44	168
Kansas	47,462	114,984	556,949	85	206
Kentucky	54,621	201,179	770,495	71	261
Louisiana	56,889	118,515	874,639	65	136
Maine [4]	28,587	28,895	267,787	107	108
Maryland	62,799	146,929	1,056,059	59	139
Massachusetts [4]	257,560	212,001	1,754,524	147	121
Michigan [4]	338,702	564,450	2,544,990	133	222
Minnesota [4]	72,005	92,153	1,081,000	67	58
Mississippi	22,498	111,217	531,069	42	209
Missouri	61,042	236,366	1,359,183	45	174
Montana [4]	10,120	23,313	149,804	68	156
Nebraska	17,334	59,295	379,750	46	156
Nevada [4]	25,312	31,420	198,378	128	158
New Hampshire	12,454	58,522	231,056	54	253
New Jersey [2]	338,273	154,844	2,206,704	153	70
New Mexico	15,077	42,661	231,421	65	184
New York	645,373	1,346,142	5,401,314	119	249
North Carolina	63,780	516,039	1,617,489	38	309
North Dakota	10,661	18,236	111,904	95	163
Ohio	214,329	768,055	3,224,842	66	238
Oklahoma	36,707	55,934	626,616	59	89
Oregon [4]	53,794	122,949	608,181	88	202
Pennsylvania [4]	316,732	493,570	3,585,426	88	166
Rhode Island [2]	35,190	33,427	286,589	123	117
South Carolina	40,529	216,407	779,911	52	280
South Dakota	4,144	23,103	127,513	32	181
Tennessee	74,210	296,396	1,199,131	62	247
Texas	85,622	328,613	3,273,895	26	100
Utah	18,677	53,055	281,173	66	189
Vermont [2]	9,734	3,099	123,885	79	25
Virginia	22,728	254,739	1,293,950	18	190
Washington [2]	127,824	6,482	839,517	152	8
West Virginia	25,295	114,411	433,492	58	264
Wisconsin	87,063	301,366	1,274,131	68	237
Wyoming	4,160	24,454	87,580	47	279
U.S. average				78	187
Average, current fund deficit States				124	52
Average, pending fund deficit States				103	146

[1] December
[2] Current fund deficit.
[3] All compilations regarding the District done by TRC staff.
[4] Pending fund deficit.

Source: U.S. Department of Labor, U.I. P.L. No. 1278, CPEC-Research: May 1975.

16. In the Mid-Atlantic Region and the Southeastern United States, most states including Maryland, Virginia, North Carolina, South Carolina, Georgia, Tennessee, Alabama, Florida, Pennsylvania and New York require that an individual who has been disqualified, or refuses an offer of suitable work, must return to full-time employment for a specific period of time and/or that person must earn a certain dollar amount at that employment and then be terminated through no fault of his own in order to qualify for U.I. benefits.[49]

17. Claimants, currently receiving unemployment insurance are presently allowed to earn up to forty percent (40 percent) of their weekly benefit amount in part time employment without any loss of their benefits. However, for every dollar of additional earnings beyond the 40-percent level the individual loses $1 of benefits. Such a process does not afford an individual incentive to earn more than 40 percent of his weekly benefit amount.[50]

18. As of July 23, 1977, the national Extended Benefits Program has been triggered off. That is, national insured unemployment is below the 4.5% necessary to continue the program on a nation wide basis. This is not to say, however, that the Extended Benefit Program has been triggered off in the states such as those that continue to have high insured unemployment. As a result, approximately 2,000 jobless District workers will not receive additional EB benefit checks because the District program now runs up to 34 weeks and not 39 as had been the case.

CONCLUSIONS

The District of Columbia Unemployment Insurance Program has an inherent tendency for budgetary imbalance. An extremely generous benefit structure—that is, when compared to Maryland, Virginia, other states in this area and the entire United States—a low and inflexible tax base, a low tax rate structure that does not account for individual negative reserve accounts, and a law that in many instances does not foster the true intent of unemployment insurance, have all contributed to the problems which plague the District's employers and unemployment compensation board. These internal inadequacies have not allowed the District's U.I. program to respond to the recent increase in insured unemployment.

Several major problems can be identified at present. First, benefit payments continue to grow because wages continue to grow. This in itself is not bad since it is an indication of a nonstagnant economy. However, no adjustment has been made in the taxable wage base since 1972. Therefore what we have is a built-in mechanism which allows benefits to change without an offsetting mechanism which allows revenues to increase. As long as the taxable wage base remains inflexible, total wages (average wages, benefits) will increase faster than taxable wages. If a change in total wages, which is the base for benefits, is not offset by a similar change in the tax base, which is the base for contributions, total wages will continue to grow without a similar percentage increase in the tax base. Therefore, contributions may never equal total benefit payments thus jeopardizing the chances of the Trust Fund achieving solvency.

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[49] Source: Board of Trade.
[50] District of Unemployment Compensation Act, p. 36.

Second, though the District's U.I. Tax rate structure may seem to be very low in comparison to most other jurisdictions (.1 percent to 2.7 percent compared with some that go over 6 percent) it has the potential of being more burdensome than most. Many employers who in past years were paying at the lowest rate of .1 percent were actually paying contributions which far exceeded the benefits which, if any, were being charged to their accounts. These 'surplus' taxes are, in reality, intended to subsidize the accounts of those employers whose accounts showed that benefits paid to their former employees actually exceeded the employer's contributions to the fund.

A tax rate ceiling of 2.7 percent is an invitation to some employers—e.g. construction which is prone to seasonal fluctuations—to achieve a negative reserve. Employers who fall into this category no longer fear that, if they fire or layoff additional workers, their tax rates will go up. Their tax rates have already reached the legal limit. In effect it may be to their advantage to place some of their workers on temporary layoff because then the taxable portion of their payroll is reduced thus, decreasing their total U.I. tax liability.

Employers who do not have a negative reserve (i.e. their contributions exceed benefits charged to their account) are left to pick up the tab for those employers who do have a negative reserve and are not compelled to eradicate the situation. As a result those employers for whom a tax rate of .1 percent was already more than they should have had, are now compelled to pay at the highest rate of 2.7 percent—partially because of the use in unemployment but also because of the negative balances of some 4,900 employers. Thus, while a high tax rate may seem to be burdensome, a low tax rate structure which appears extremely fair, has the potential (as has been shown) of being unduly burdensome.

The experience rating system, that had worked well in previous years in helping many employers, especially those in the retail and service areas, obtain low U.I. tax rates, is not now, nor has it been for the past 2 years, a viable incentive for maintaining stable employment. It presently exists only as an idea. A low tax rate has made experience rating an incentive for no one. Those employers who have earned a .1 percent tax rate, but are paying 2.7 percent have developed immense reserves in their accounts which are meaningless unless the Fund regains its solvency, allowing a return to the actual tax rates based upon experience rating.

In addition, the District's Unemployment Compensation Act itself may provide disincentives for individuals to either maintain or seek additional employment. In most other states in order to collect benefits a person must have been separated from their employment through no fault of their own. While the District does provide a penalty for those who voluntarily quit their jobs, it does not completely exclude them from collecting benefits before finding other employment.

RECOMMENDATIONS

Before any enumeration of recommendations can be made, the premises upon which these recommendations are based should first be presented.

First of all we are presented with the given—the Unemployment Insurance System, along with who is covered (the insured workers).

Next we are confronted with the question of how to fund such a program. The legally prescribed method of funding is through employer contributions. It is not until we attempt to describe how much each employer is to pay that we face an ideological "fork in the road." That is, setting the U.I. tax rates for employer contributions can be viewed in one of two ways. The actual rates that are chosen will reflect which view is held.

The first argument suggests that an employer should be solely responsible for all benefits paid to his former employees.[51] It favors a wide range in the tax rate structure—e.g. 0 percent to 6 percent or 7 percent or higher of taxable wages. A seven-percent maximum tax rate (rather than the present 2.7 percent) does offer much more incentive for an employer to maintain stable employment and secure lower rates under an experience rating system.

Conversely, (following the same argument) an employer with no benefit payments charged to his account should not have to pay any contributions. Therefore while the tax rates seem higher (than the present structure in the District) those employers who have achieved a very good experience rating would actually be paying less under this system.

A second argument postulates that certain industries are especially susceptible to higher unemployment—have to fire or layoff workers—due to seasonable adjustment e.g. construction, or nationally induced economic factors e.g. automobile companies, etc. The question then arises why should these industries with high benefits payments charged to their accounts and not fully to blame for the turnover be forced to pay extremely high rates while other industries may pay little or nothing. Thus, a rate structure similar to the one found in the District is developed. During periods of low unemployment most industries are paying their fair share based primarily on their turnover rates. When unemployment increases in those industries prone to turnover, all employers (including the safe industries) pay higher contributions—just what has happened recently in the District.

Under the first argument above, the reply may be that the high unemployment industries should not be subsidized at all. U.I. taxes are a cost of doing business and as such all costs should be passed on to the consumer in the form of higher prices. By subsidizing such industries the true costs of the products are not fully realized by the consumer thus hampering market behavior. An automobile purchased in the District may be cheaper than its real cost because someone else helped pay some of G.M.'s unemployment insurance.

However, as the second argument would point out, high U.I. taxes may force the turnover industries to seek greener pastures. Such an industry suddenly facing a higher tax rate may decide to move to a jurisdiction with lower rates (assuming it would be economically feasible) and actually hurt the economy that it leaves.

The recommendations presented below combine points from both arguments. Actions must be taken to remove the incentive that the high turnover industries (and others) have to go to a negative reserve under the 2.7-percent tax rate limit. By the same token, rates cannot be

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[51] A similar argument was made by Denis R. J. George and Louis-George Simard in: Report on Long Term Financing of Connecticut Unemployment Insurance Program, 1975, State of Connecticut.

made so burdensome as to alter locational decisions. All recommendations made are done so bearing in mind that the District cannot be placed at a disadvantage with surrounding states. Therefore, it is recommended:

GENERAL

1. The City Council request that the U.S. Secretary of Labor not impose a reduction of a 0.3 percent in the maximum federal credit in order to repay Federal loans. Employers in the District are already burdened with the maximum tax rate. A reduction in the maximum credit can only add to such a burden. Compliance to this recommendation would also aid employers in most states especially the highly industrialized northeast.

2. That all such loans (if repayment is indeed required) be repaid out of the D.C. Trust Fund at a rate of 20 percent of the Fund balance per year including interest earned. In addition, all calculations, regarding the mandatory June 30 requirement that the entire Fund be 4 percent of the previous year's taxable wages, be made before repayment and thus include the repayment amount.

This method is chosen for several reasons. First, it assures the repayment of all loans while not adding an additional tax burden to the employers. Second, unless additional loans are needed, it assures repayment in approximately 10 years. Third, if adidtional loans are indeed needed, the money can still be borrowed from the federal government—interest free.

U.I. TAX STRUCTURE

3. That the tax base (presently $4,200 per employee) be made equal to 45 percent of the average annual income for covered employees in the District. This can be done by annualizing the average income for the first two calendar quarters, taking 45 percent of such a figure, rounding the figure to the nearest $100, announcing such a base figure by the beginning of the fourth quarter and making it effective January 1st of the next year. When the present tax base of $4,200 was introduced in 1972 it was approximately 48 percent of average individual income but has now dropped to 36.5 percent. By allowing the tax base to change as incomes change, a mechanism is created that offsets the built-in escalator provisions of the District's benefit structure. This recommendation should be implemented after the incorporation of the $6,000 base on January 1, 1978.

4. That the current experience rating system (see page 24) and corresponding tax rates be maintained with only one addition. A surtax is to be charged against those accounts that have a negative reserve. The amount of the surtax is to depend upon the level of the negative reserve in relation to the employer's annual taxable payroll. For those accounts which maintain a contribution to benefit ratio of one or greater the tax rates will remain as they are. A potential surtax rate structure is presented below. Additional actuarial studies would have to be done, however the concept should be accepted.

SURTAX RATE STRUCTURE

If benefits charged to an employer's account exceed contributions paid to the Trust Fund (since the program's inception) by less than

<0.3 percent of the employer's average annual taxable payroll, for the last 3 twelve-month periods, the surtax is 0.3 percent.

The surtax is an additional:

0.3 percent if 0.3 percent < negative reserve ÷ taxable payroll.

0.6 percent if 0.3 percent ≧ negative reserve ÷ taxable payroll <0.5 percent.

0.9 percent if 0.5 percent ≧ negative reserve ÷ taxable payroll <0.7 percent.

1.2 percent if 0.7 percent ≧ negative reserve ÷ taxable payroll <0.9 percent.

1.5 percent if 0.9 percent ≧ negative reserve ÷ taxable payroll <1.2 percent.

1.8 percent if negative reserve ÷ taxable payroll ≧1.2 percent.

Such a system would broaden the tax rate range to .1 percent to 4.5 percent with 2.7 percent remaining the maximum for those employers with a positive reserve.

Table III p. 356 indicates that 25 states currently differentiate between positive and negative reserves in their tax rate calculations. Such a system is being recommended for the District as a means of reducing the tax burden of the low turnover employers. The rate for new employers under this system will be the average rate for these employers with a surplus account, i.e. that the rate for new employers would be <2.7 percent.

This recommendation contains elements from both arguments presented above. Subsidizing high unemployment employers will not be totally eliminated. However, these industries will have to pay a greater share of the costs which they impose upon the system and, due to the higher rate, many of these employers will find it economical to maintain a more stable employment picture. Additionally a surtax of 1.8 percent, though more burdensome, does not bring the maximum rate (after federal deductibility) (normally 4.5 percent) much higher than Maryland's 3.6 percent, and thus should not disturb locational decisions for industries having to pay it. In fact such a surtax along with the recommendations below may encourage other employers who qualify for low tax rate but have to pay the maximum—2.7 percent—to remain in the District (e.g. store owners) because they will be relieved of some of their burden.

Example I below illustrates the effects of recommendations 3 and 4 in simplified form.

EXAMPLE I

Given:

Calendar Year 1977 (The base would have been $5,200/employee with the 45-percent rule).

Two Employers, A and B (the universe).

Each currently employs 10 persons at $11,500/person.

Average annual payroll for each is $115,000.

A's contributions over the years have been greater than the benefits charged to his account by 4 percent of his taxable payroll.

B's contributions over the years have been less than the benefits charged to his account by 4 percent of his taxable payroll.

$2,300 is needed to Balance the Trust Fund.

CASE I (UNDER THE PRESENT SYSTEM)

A (positive reserve):
(a) in theory: 0.1 percent rate × $42,000 ($4,200/employee) = $42.00.
(b) in reality: Employer A also has to pay the maximum rate (2.7) in order to bring the Trust Fund to the required level. Therefore, A's liability = 2.7 percent × $42,000 = $1,134.
(c) note: The Trust Fund is still $62 short of being balanced.

B (negative reserve):
2.7 percent rate × $42,000 = $1,134.

CASE II (45 PERCENT BASE—REC. NO. 3)

(a) .1 percent × $52,000 = $52.
(b) In order to balance the Fund, A's rate goes to 1.5 percent. Therefore, 1.5 percent × $52,000 = $800.
(c) note: Even though the base has increased, A's tax liability, in this case, has decreased.

2.7 percent × $52,000 = $1,404.

CASE III (NEGATIVE RESERVE SURTAX, REC. NO. 4) WITH PRESENT SYSTEM

(a) .1 percent × $42,000 = $42.
(b) A's tax rate must be increased to achieve the mandatory balance therefore, .5 percent × $42,000 = $210.

4.5 percent × $42,000 = $2,100.

CASE IV (RECOMMENDATIONS 3 AND 4)

(a) .1 percent × $52,000 = $52. The fund is balanced according to requirements.

4.5 percent × $52,000 = $2,600.

COMMENTS—GOING FROM CASES I TO IV

A's tax rate remains the same.
A's liability is up 19.2 percent rather than 2,600 percent as in Case I.

B's liability is up 129 percent.

USING PRICE INDEX AND 1972 AS THE BASE

A's liability is down 7 percent.

B's liability is up 51.5 percent.

BENEFITS

5. That the benefit duration period be shortened 8 weeks from 34 to 26 weeks. The duration of benefits should be such that during periods of high unemployment the insured unemployed can go from the regular benefit program into the Extended Benefits Program. E.B. begins during the 27th week of unemployment. Therefore no justifiable reason is seen for keeping the duration at 34 weeks when 26 weeks (as in Md. and Va.) will allow such a transition.

6. That current formulas regarding the size of the Trust Fund be abandoned. The following is suggested as a substitute method:

On any June 30, the amount in the Trust Fund for the 12-month period ending the previous December 31 must be sufficient to provide 26 weeks of benefits, at the current average weekly benefit amount, to a potential 5 percent private sector insured unemployment rate.

Current U.S. Department of Labor guidelines which suggest that the amount of the Trust Fund be one and one-half times the benefit amount paid out during the highest benefit year are no longer applicable in times of rising wages. Concern should be addressed to unemployment levels and not some past meaningless dollar amount.

The Trust Fund balances of the late sixties and early seventies would have been more than adequate to fulfill the requirements set forth in this recommendation. Had this recommendation been in effect at that time the subsequent and current debt facing DUCB would not be as critical as it is.

The happenings of the past several years have provided enough information to allow this recommendation to be made. The current tax rate and structure and Trust Fund indicators have proven insufficient in light of the worst recession since the 1930's. In addition, we now have an idea of how high insured unemployment can go in this area. The selection of 5% insured unemployment in the private sector would not help the industrialized north east. Their unemployment rates were much higher. But, in light of the material presented in this paper 5% seems very applicable to the District.

The District's Unemployment Compensation Board no longer has huge balances which have accrued since the 1930's to fall back on. In essence it is starting from scratch.

According to this recommendation, the Fund Balance for private sector employers should be approximately $69 million. Such a balance may take three to 5 years to develop.

If the amount of the Trust Fund is not sufficient to meet the required levels all employers will have their tax rates raised by an amount (necessary) to meet the required level. The limits will be 2.7 percent for employers with a positive balance and 4.5 percent for employers with a negative balance. The increased rates should remain in effect until the end of the quarter in which the desired level is reached.

ENFORCEMENT

The following recommendations address the enforcement aspects of unemployment insurance benefits. Therefore it is further recommended:

1. That the "good cause" criteria regarding a voluntary quit be reviewed strictly as job related.

2. That a finding of voluntary quit without "good cause" disqualify an individual from collecting benefits until he/she returns to full time employment and fulfills both time and earning requirements, before being considered once again to be eligible to collect benefits.

3. That termination for gross misconduct disqualify an individual from collecting benefits until he/she meets the requirements set forth in the above recommendation.

4. That the benefit collection period begin from the date of separation and not on the day the claim is filed. This recommendation would not allow a claimant to wait until the end of a calendar quarter in order to increase his/her base period earnings before filing a claim.

5. Section 7e of the District of Columbia Unemployment Compensation Act should be modified in such a way as to encourage a claimant

to seek part time or full time employment by not decreasing benefits on a dollar for dollar basis beyond the forty percent of benefits. A formula should be used whereby as the claimants earnings increase and benefits decrease total earnings continue to increase until collection of benefits is phased out.

Attachment I

OCCUPATIONS NOT COVERED

Agricultural or horticultural organizations exempt from income tax.

Babysitting services by an individual under 18.

Casual labor not in course of employer's trade or business.

Fishing and farming of fish, crustacea, sponges, seaweeds, and other forms of aquatic animal and vegetable life, except (a) salmon and halibut fishing for commercial purposes, and (b) service on vessels of more than 10 net tons engaged in such activities.

Insurance agents or solicitors solely on commission basis.

Internes in employ of hospital who have completed 4-year course in state chartered or approved medical school.

Maritime employees on other than American vessels.

Newspaper and shopping news carriers under 18.

Organizations exempt from income tax, with respect to service performed in calendar quarter if remuneration does not exceed $45.

PUBLIC INTERNATIONAL ORGANIZATIONS

Relatives, i.e., service performed by individual in employ of child or spouse, or by child under 21 in employ of parent.

Service covered by federal unemployment compensation law providing for payment of benefits.

Students in employ of school not exempt from income tax in calendar quarter in which remuneration (excluding board, room, and tuition) does not exceed $45, and students employed by organization exempt from income tax.

Student nurses in employ of hospital or training school who are attending state-chartered or approved training school.

The following services are not covered:

Church, or organization operated for religious purposes and which is controlled by a church.

Religious duties of a minister or member of religious order.

Patients employed in a rehabilitation facility or sheltered workshop.

Individual receiving unemployment work-relief or work-training under program financed by federal agency of state or political subdivision.

Inmate of state prison hospital or other state correctional institution.

GOVERNMENT AND NONPROFIT EMPLOYERS

Coverage is mandatory for tax exempt nonprofit organizations and District hospitals and institutions of higher education.

U.S. DEPARTMENT OF LABOR

ATTACHMENT II

EMPLOYMENT AND TRAINING ADMINISTRATION
Unemployment Insurance Service

Significant Provisions of State Unemployment Insurance Laws, JULY 2, 1978

PREPARED FOR READY REFERENCE. CONSULT THE STATE LAW AND STATE EMPLOYMENT SECURITY AGENCY FOR AUTHORITATIVE INFORMATION

State	BENEFITS									COVERAGE	TAXES	
	Qualifying wage or employment (number x wba or as indicated)[1]	Waiting week[2]	Computation of wba (fraction of hqw or as indicated)[1,3]	Wba for total unemployment[4]		Earnings disregarded[5]	Duration in 52-week period			Size of firm (1 worker in specified time and/or size of payroll)[16]	1977 Tax rates (percent of wages)[9]	
							Proportion of base-period wages[6]	Benefit weeks for total unemployment[7]				
				Min.	Max.			Min[8]	Max.		Min.	Max.
Ala.	1-1/2 x hqw; not less than $522	0	1/24	$15	$90	$6	1/3	11+	26	20 weeks	[9]0.5	[9]4.0
Alaska	$750; $100 outside HQ	1	2.3-1.1% of annual wages, + $10 per dep. up to $30	18-28	90-120	Greater of $10 or 1/2 basic wba	[c]34-31%	14	28	Any time	[9]2.3	[9]4.8
Ariz.	1-1/2 x hqw; $375 in HQ	1	1/25	15	85	$15	1/3	12+	26	20 weeks	0.1	3.6
Ark.	30; wages in 2 quarters	1	1/26 up to 66-2/3% of State aww	15	100	2/5	1/3	10	26	10 days	0.5	4.4
Calif.	$750	1	1/24-1/31	30	104	$18	1/2	[7]12+-15	[7]26	Over $100 in any quarter	[9]1.4	4.9
Colo.	30	1	60% of 1/13 of claimant's hqw up to 60% of State aww	25	130	1/4 wba	1/3	7+-10	26	13 weeks	1.8	3.6
Conn.	40; or 1-1/2 x hqw	0	1/26, up to 60% of State aww + $5 per dep. up to 1/2 wba	15-20	122-183	1/3 wages	Uniform	[7]26	[7]26	13 weeks	1.5	6.0
Del.	36	0	1/26, up to 66-2/3% of State aww	20	150	Greater of $10 or 30% of wba	1/2	17	26	20 weeks	1.6	4.5
D.C.	1-1/2 x hqw; not less than $450; $300 in 1 quarter	1	1/23 up to 66-2/3% of State aww + $1 per dep. up to $3	13-14	[4]160	2/5 wba	1/2	17+	34	Any time	2.7	2.7
Fla.	20 weeks employment at average of $20 or more	1	1/2 claimant's aww	10	82	$5	1/2 weeks employment	10	26	20 weeks	1.1*	4.5
Ga.	1-1/2 x hqw	[2]1	1/25+$1.00	27	90	$8	1/4	9	26	20 weeks	.06	4.7
Hawaii	30; 14 weeks employment	[10]1	1/25 up to 66-2/3% of State aww	5	126	$2	Uniform	[7]26	[7]26	Any time	[9]3.5	[9]3.5

State	BENEFITS								COVERAGE	TAXES	
	Qualifying wage or employment (number x wba or as indicated)[1]	Waiting week[2]	Computation of wba (fraction of hqw or as indicated)[1,3]	Wba for total unemployment[4]		Earnings disregarded[5]	Duration in 52-week period: Proportion of base-period wages[6]	Duration in 52-week period: Benefit weeks for total unemployment[7]		Size of firm (1 worker in specified time and/or size of payroll)[16]	1977 Tax rates (percent of wages)[9]	
				Min.	Max.			Min.[8]	Max.		Min.	Max.
Idaho	1-1/4 x hqw; not less than $520.01; $416.01 in 1 quarter; wages in 2 quarters	1	1/26 up to 60% of State aww.	$17	116	1/2 wba	Weighted schedule of bpw in relation to hqw	10	26	20 weeks or $300 in any quarter	[9]0.9	[9]4.0
Ill.	$1,000; $275 outside HQ	[10]1	½ claimant aww up to 50% of State aww[13]	15	121-145	$7	Uniform	26	26	20 weeks	0.1	4.0
Ind.	1-1/4 x hqw; not less than $500; $300 in last 2 quarters	1	4.3% of high quarter wage credits	35	74-124	20% of wba from other than BP employer	1/4	4+	26	20 weeks	0.3	3.3
Iowa	$600; $400 in 1 quarter and $200 in another	0	1/20 up to 66-2/3% of State aww	20	133	$15 + 1/2 wages	1/2	10	39	20 weeks	[9]0.9	[9]4.9
Kans.	30; wages in 2 quarters	1	1/25 up to 60% of State aww	29	116	$8	1/3	10	26	20 weeks	0	3.6
Ky.	1-3/8 x hqw; 8 x wba in last 2 quarters; $500 in 1 quarter and $500 in other quarters	0	1/23 up to 55% of State aww	12	111	1/5 wages	1/3	15	26	20 weeks	2.7	4.2
La.	30	[10]1	1/20-1/25[14]	10	130	1/2 wba	2/5	12	28	20 weeks	0.4	3.0
Maine	$900; $250 in each of 2 quarters	0	1/22 up to 52% of State aww +$5 per dep. to 1/2 wba	12-17	90-135	$10	1/3	11+-25	26	20 weeks	2.7	5.3
Md.	1-1/2 x hqw; $192.01 in 1 quarter; wages in 2 quarters	0	1/24 + $3 per dep. up to $12	10-13	[4]106	$10	Uniform	26	26	Any time	2.8	3.6
Mass.	30; not less than $1,200	1	1/21-1/26 up to 57.5% of State aww, + $6 per dep. up to 1/2 wba[3]	12-18	115-173	40% not less than $10 nor more than $30	36%	9+-30	30	13 weeks	3.9	5.1
Mich.	14 weeks employment at $25.01 or more	0	60% of claimant's aww up to $97 with variable max. for claimants with dep.[3]	[4]16-18	97-136	Up to 1/2 wba[5]	3/4 weeks employment	11	26	20 weeks or $1,000 in CY	0.8	6.6
Minn.	15 weeks employment at $50 or more	[10]1	13/	18	133	$25	7/10 weeks employment	13	26	20 weeks[17]	[9]1.0	[9]7.5
Miss.	36; $160 in 1 quarter; wages in 2 quarters	1	1/26	10	80	$5	1/3	12	26	20 weeks	2.1	2.7

State	Qualifying wage or employment (number x wba or as indicated)[1]	Waiting week[2]	BENEFITS: Computation of wba (fraction of hqw or as indicated)[1,3]	Wba for total unemployment[4] Min.	Wba for total unemployment[4] Max.	Earnings disregarded[5]	Duration in 52-week period: Proportion of base-period wages[6]	Duration in 52-week period: Benefit weeks for total unemployment[7] Min.[8]	Duration in 52-week period: Benefit weeks for total unemployment[7] Max.	COVERAGE: Size of firm (1 worker in specified time and/or size of payroll)[16]	TAXES: 1977 Tax rates (percent of wages)[9] Min.	TAXES: 1977 Tax rates (percent of wages)[9] Max.
Mo.	30 x wba; $300 in 1 quarter; wages in 2 quarters	[10]1	1/20	$15	$85	$10	1/3	8-13+	26	20 weeks	0.5	3.2
Mont.	1-1/2 x hqw	1	1/26 up to 60% of State aww	12	113	1/2 wages in excess of 1/4 wba	Weighted schedule of bpw in relation to hqw	12	26	Over $500 in current or preceding year	3.1	3.1
Neb.	$600; $200 in each of 2 quarters	1	1/19-1/23	12	90	Up to 1/2 wba[5]	1/3	17	26	20 weeks	0.1	3.7
Nev.	1-1/2 x hqw	0	1/25, up to 50% of State aww	16	100	1/4 wages	1/3	11	26	$225 in any quarter	[9]1.1	[9]3.5
N.H.	$1,200; $300 in each of 2 quarters	0	2.3-1.2% of annual wages	21	102	1/5 wba	Uniform	26	26	20 weeks	.15	4.0
N.J.	20 weeks employment at $30 or more; or $2,200	[10]1	66-2/3% of claimant's aww up to 50% of State aww	20	110	Greater of $5 or 1/5 wba	3/4 weeks employment	15	26	$1,000 in any year	[9]1.2	[9]6.2
N.Mex.	1-1/4 x hqw	1	1/26; not less than 10% nor more than 50% of State aww	18	90	1/5 wba	3/5	18+	30	20 weeks or $450 in any quarter	1.5	4.2
N.Y.	20 weeks employment at average of $40 or more[11]	[12]1	67-50% of claimant's aww	25	115[14]	(12)	Uniform	26	26	$300 in any quarter	1.5	5.2
N.C.	1-1/2 x hqw; not less than $565.50; $150 in 1 quarter	1	1/26 up to 66-2/3% of State aww	15	112	1/2 wba	1/3 bpw	13	26	20 weeks	.5	4.7
N.Dak.	40; wages in 2 quarters	1	1/26 up to 67% of State aww	15	121	1/2 wba	(6)	18	26	20 weeks	1.3	5.0
Ohio	20 weeks employment at $20 or more	[10]1	1/2 claimant's aww + d.a. of $1-$59 based on claimant's aww and number of dep. 3/17/	10-16	111-175	1/5 wba	20 x wba + wba for each credit week in excess of 20	20	26	20 weeks	1.1	4.8
Okla.	1-1/2 x hqw; not less than $1,000 in BP; $6,000	1	1/25 up to 56% of State aww 14/	16	116	$7	1/3	10+	26	20 weeks	1.2	2.7
Oreg.	18 weeks employment at average of $20 or more; not less than $700	1	1.25% of bpw up to 55% of State aww	30	119	1/3 wba	1/3	9	26	18 weeks or $225 in any quarter	[9]2.6	[9]4.0

State	BENEFITS									COVERAGE	TAXES	
	Qualifying wage or employment (number x wba or as indicated)[1]	Waiting week[2]	Computation of wba (fraction of hqw or as indicated)[1,3]	Wba for total unemployment[4]		Earnings disregarded[5]	Duration in 52-week period			Size of firm (1 worker in specified time and/or size of payroll)[16]	1977 Tax rates (percent of wages)[9]	
				Min.	Max.		Proportion of base-period wages[6]	Benefit weeks for total unemployment[7] Min.[8]	Max.		Min.	Max.
Pa.	32 + -36; $120 in HQ and $440 in BP; at least 20% of bpw outside HQ	0	1/20-1/25 up to 66-2/3% of State aww + $5 for 1 dep; $3 for 2d	$13-18	$143-151	Greater of $6 or 40% wba	Uniform	30	30	Any time	1.0	4.0
P.R.	21 + -30; not less than $280; $75 in 1 quarter; wages in 2 quarters	1	1/15-1/26; up to 60% of State aww	7	70	wba	Uniform	[7]20	[7]20	Any time	[9]2.95	[9]3.45
R.I.	20 weeks employment at $46 or more; or $2,760	[2]1	55% of claimant's aww up to 60% of State aww, + $5 per dep. up to $20	26-31	110-130	$5	3/5 weeks employment	12	26	Any time	3.2	5.0
S.C.	1-1/2 x hqw; not less than $300; $180 in 1 quarter	1	1/26 up to 66-2/3% of State aww	10	119	1/4 wba	1/3	10	26	20 weeks	1.3	4.1
S.Dak.	$400 in HQ; 10 x wba outside HQ	1	1/22 up to 62% of State aww	19	102	1/2 wages up to 1/2 wba	1/3	10+	26	20 weeks	0	2.7
Tenn.	36; $338.01 in 1 quarter	1	1/26	14	95	$20	1/3	12	26	20 weeks	.75	4.0
Tex.	1-1/2 x hqw; not less than $500 or 2/3 FICA tax base	[10]1	1/25[17]	15	84	Greater of $5 or 1/4 wba	27%	9	26	20 weeks	0.1	4.0
Utah	19 weeks employment at $20 or more; not less than $700	1	1/26 up to 65% of State aww	10	128	Lesser of $12 or 1/2 wba from other than regular employer	Weighted schedule of bpw in relation to hqw	10-22	36	$140 in CQ in current or preceding CY	[9]1.5	[9]2.9
V.I.	26+-30; not less than $99 in 1 quarter and wages in 2 quarters	1	1/23-1/25	15	82	1/4 wages in excess of $5	Uniform	26	26	Any time	2.7	2.7
Vt.	20 weeks employment at $35 or more	1	1/2 claimant's aww for highest 20 weeks up to 60% of State aww	18	109	$15 + $3 for each dep. up to $15	Uniform	26	26	20 weeks	1.0	6.1
Va.	36; wages in 2 quarters	[10]1	1/25	38	115	Greater of 1/3 wba or $10	1/3	12	26	20 weeks	.85	2.7
Wash.	$1,800[15]	1	1/25 of average of 2 highest quarter wages up to 55% of State aww	17	128	$5 + 1/4 wages	1/3	8+-23+	30	Any time	[9]3.0	[9]3.0

State	BENEFITS									COVERAGE	TAXES	
	Qualifying wage or employment (number x wba or as indicated)[1]	Waiting week[2]	Computation of wba (fraction of hqw or as indicated)[1,3]	Wba for total unemployment[4]		Earnings disregarded[5]	Duration in 52-week period			Size of firm (1 worker in specified time and/or size of payroll)[16]	1977 Tax rates (percent of wages)[9]	
				Min.	Max.		Proportion of base-period wages[6]	Benefit weeks for total unemployment[7]			Min.	Max.
								Min.[8]	Max.			
W.Va.	$1,150	[2]1	1.6-0.9% of annual wages up to 66-2/3% of State aww	18	149	$25	Uniform	26	26	20 weeks	0	3.3
Wisc.	15 weeks employment; average of $48.01 or more with 1 employer	0	50% of claimant's aww up to 66-2/3% of State aww	26	139	Up to 1/2 wba[3]	8/10 weeks employment	1-13+	34	20 weeks	0.5	5.7
Wyo.	1-6/10 x hqw; not less than $600 in 1 quarter	1	1/25 up to 55% of State aww	24	121	Greater of $15 or 25% wba	3/10	11-24	26	$500 in current or preceding CY	.89	3.59

[1]Weekly benefit amount abbreviated in columns and footnotes as wba; base period, BP; base-period wages, bpw; high quarter, HQ; high-quarter wages, hqw; average weekly wage, aww; benefit year, BY; calendar quarter, CQ; calendar year, CY; dependent, dep.; dependents allowances, da.; minimum, min.; maximum, max.

[2]Unless otherwise noted, waiting period same for total or partial unemployment. W.Va., no waiting period required for partial unemployment. Waiting period may be suspended if Governor declares State of emergency following disaster, N.Y., R.I. In Ga. no waiting week if claimant unemployed not through own fault.

[3]When States use weighted high-quarter, annual-wage, or average weekly-wage formula, approximate fractions or percentages figured at midpoint of lowest and highest normal wage brackets. When da provided, fraction applies to basic wba. In States noted variable amounts above max. basic benefits limited to claimants with specified number of dep. and earnings in excess of amounts applicable to max. basic wba. In Ind. da. paid only to claimants with earnings in excess of that needed to qualify for basic wba and who have 1-4 depa. In Mich. and Ohio claimants may be eligible for augmented amount at all benefit levels but benefit amounts above basic max. available only to claimants in dependency classes whose aww are higher than that required for max. basic benefit. In Mass. for claimant with aww in excess of $66 wba computed at 1/52 of 2 highest quarters of earnings or 1/26 of highest quarter if claimant had no more than 2 quarters work.

[4]When 2 amounts given, higher includes da. Higher for min. wba includes max. allowance for one dep.; Mich. for 1 dep. child or 2 dep. other than a child. In D.C. and Md., same max. with or without dep.

[5]In computing wba for partial unemployment, in States noted full wba paid if earnings are less than 1/2 wba; 1/2 wba if earnings are 1/2 wba but less than wba.

[6]With exception of N.Dak., States noted have weighted schedule with percent of benefits based on bottom of lowest and highest wage brackets. In N.Dak., 18, 22, and 26 weeks, depending on amount of BP earnings.

[7]Benefits extended under State program when unemployment in State reaches specified levels: Calif., Hawaii, by 50%; Conn. by 13 weeks. In P.R. benefits extended by 32 weeks in certain industries, occupations or establishments when special unemployment situation exists. Benefits also may be extended during periods of high unemployment by 50%, up to 13 weeks, under Federal-State Extended Compensation Program.

[8]For claimants with min. qualifying wages and min. wba. When two amounts shown, range of duration applies to claimants with min. qualifying wages in BP; longer duration applies with min. wba; shorter duration applies with max. possible concentration of wages in HQ,; therefore highest wba possible for such BP earnings. Wis. determines entitlement separately for each employer. Lower end of range applies to claimants with only 1 week of work at qualifying wage; upper end to claimants with 15 weeks or more of such wages.

[9]Represents min.-max. rates assigned employers in CY 1977. Ala., Alaska, N.J. require employee taxes. Contributions for 1978 required on wages up to $6,000 in all States except N.Mex., $6,100; N.J., $6,200; Iowa, $6,500; Ala., $6,600; Nevada, $6,900; Minn., $7,500; Oreg., $8,000; Wash., $8,400; Hawaii, $9,800; Idaho and Utah, $9,600; Alaska, $10,000; P.R., all wages.

[10]Waiting period compensable if claimant entitled to 12 consecutive weeks of benefits immediately following, Hawaii; unemployed at least 6 weeks and not disqualified, La.; after 9 consecutive weeks benefits paid, Mo.; when benefits are payable for third week following waiting period, N.J.; after benefits paid 4 weeks, Tex., Va.; after any 4 weeks in BY, Minn.; after 3d week unemployment, Ill.; after 3d week of total unemployment, Ohio.

[11]Or 15 weeks in last year and 40 weeks in last 2 years of aww of $40 or more, N.Y.

[12]For N.Y., waiting period is 4 effective days accumulated in 1-4 weeks; partial benefits 1/4 wba for each 1 to 3 effective days. Effective days: fourth and each subsequent day of total unemployment in week for which not more than $115 is paid.

[13]To 60% State aww if claimant has nonworking spouse; 66-2/3% if he had dep. child, Ill.; 60% of first $85, 40% of next $85, 50% of balance. Max. set at 64% until July 1, 1979, and 66-2/3% thereafter, Minn.

[14]Up to 66-2/3% of State aww, La. Beginning July 1, 1979, 62%; and July 1, 1980, 66-2/3%, Okla. Effective September 4, 1978, $125, N.Y.

[15]In addition to total wages of $1,800, claimant also must have either (1) 16 weeks of employment with wages of 15% of average wage or (2) 600 hours of employment.

[16]$1,500 in any CQ in current or preceding CY unless otherwise specified.

[17]Max. amount adjusted annually: by same percentage increase as occurs in State aww (Ohio) by $7 for each $10 increase in average weekly wage of manufacturing production workers (Texas).

NATURAL GAS AND ELECTRICITY TAXATION IN THE DISTRICT OF COLUMBIA

(By Frederick J. Wells, Resources for the Future, Washington, D.C.)

I. Introduction

Unlike most other goods produced, electricity and natural gas are underpriced because of their regulated status. At least the initial reaction of most consumers would be that energy prices are already too high and would be outraged at any suggestion that they be raised even more. Nevertheless, the failure to raise gas and electricity prices to marginal, i.e., replacement or incremental, costs levels has and will continue to have serious consequences in the form of even higher costs over the long run. The existing rates, being too low, encourage overuse of electricity and gas, and require new expensive plants and additional supplies. Because these incremental supplies of electricity and gas cost much more than the existing supplies, the faster new supplies are required the faster the total cost rises.

Thus, a paradox arises: higher energy prices encourage conservation and in a regulatory setting where the total revenue to each utility is limited to current costs including a fixed return on its original cost investment, this conservation reduces energy costs. Actually there is no higher price-lower cost paradox because tax on each unit of natural gas and electricity would raise their prices but the monies raised could be refunded to consumers by a reduction in other taxes, by providing increased services to constituents or by other ways which are not related to the consumption of energy. In the District of Columbia a six percent gross receipts tax is applied to utility revenues. A five percent D.C. sales tax is also paid by customers, except governmental and a few other exempt customers. These taxes could be rearranged without increasing the total tax yields to improve their conservation impact and to reduce their regressiveness.

The encouragement, comments and patience of Robert Ebel of the District of Columbia Tax Division Commission, which provided funding for this study, are gratefully acknowledged. Essential data and comments were provided by Mr. Frank S. Walters, Mr. William Schmidt, Ms. E. D. Millstead, Ms. E. P. Baldwin and others at Potomac Electric Power Company, and by Mr. Edmund W. Smallwood, Richard A. Garner and Mr. John F. Powell, Jr. at Washington Gas Light Company. The assistance from PEPCO and WGL is particularly appreciated since not only was it critical to this study but was freely provided despite the knowledge that my recommendations were not likely to coincide with their own interests. Mr. William R. Stratton, Commissioner on the Public Service Commission of the District of

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Columbia, provided an insightful but depressingly accurate, overview and other helpful comments on an earlier draft. Ms. Linda J. Sanford of Resources for the Future analyzed much of the data. Ms. Debra A. Hemphill and Ms. Cassandra M. Madison and others on the RfF staff typed and assisted in the preparation of this paper. The help of all these people is deeply appreciated. Naturally I remain responsible for any errors or shortcomings in this work.

Increases in taxes on electricity and gas in the District of Columbia raise issues besides the design of such taxes and their regressiveness. One is the standard problem that higher energy rates may push customers out of the District into Maryland, Virginia, or elsewhere. A second problem is that the benefits of a slowing in the energy use growth rate in the District tend to be dissipated to the Maryland and Virginia jurisdictions and elsewhere because of the way in which regulation is applied to Washington Gas Light Company and Potomac Electric Power Company. A third topic is the short-run effect of higher taxes on the sales, revenues, and profits of the utilities and, ultimately, on the customers.

These and other issues are considered below. The case for electricity is considered first and in some detail. The level and structure of existing electric rates for the various customer classes is first compared to marginal costs. The revenue yield from taxes designed to raise the rates to marginal cost levels would be considerable so means of offsetting the impact on customers, especially low income customers, are discussed. Benefits of higher electricity taxes are examined in light of the current Potomac Electric Power Company (PEPCO) practice of allocating new and very expensive plant investment to all jurisdictions regardless of the growth rates in each jurisdiction. An abbreviated discussion of the benefits and problems of taxing natural gas are covered next. Unique problems, such as the extreme regressiveness of natural gas taxes and the price averaging practices of Washington Gas Light (WGL), and its pipelines, wholesale suppliers, are discussed in that section. The final section contains a summary and recommendations.

II. Electricity Taxation

The marginal cost of electricity exceeds the price being charged in the District of Columbia. Calculations (not shown here because of their length) indicate that the long run incremental cost of electricity for residential customers is at least six cents per kwh and is at least five cents per kwh for the largest commercial customers, and that the marginal costs are even greater than this in the summer when demand is at a peak (see table 1). The price charged to residential customers varies depending upon usage, but the maximum rate barely exceeds five cents per kwh: the rates to the largest commercial customers can fall to as low as 2.5 cents per kwh.

The reason that the existing rates fall below incremental costs is that they are based on the original cost of equipment rather than on the current or replacement cost. As an example, the existing original (or embedded historical) cost of Potomac Electric Power

Company's steam generating plant is $174 per kilowatt (kw) [1] while the cost of one coal burning plant under construction by PEPCO is $834 per kw, or five times as much.

A tax should be levied on each kwh sold to bring the rates up to marginal cost levels. Such a tax may bring about hardships to low income consumers, impacts on business firms, effects on the revenues of the utility, and a flow of benefits to suburban customers. Before discussing these issues, the structure of the existing rate and design of taxes must be considered.

TABLE 1.—1976 MONTHLY PEAK HOURLY DEMANDS

[In thousands of kilowatts]

	Monthly peak demand	Ratio of monthly peak demand to peak demand for year (3,500,000 kW)
January	2,308	0.66
February	2,334	.67
March	2,086	.60
April	2,821	.81
May	2,382	.68
June	3,455	.99
July	3,500	1.00
August	3,440	.98
September	3,012	.86
October	2,208	.63
November	2,305	.66
December	2,461	.70

Source: Annual report of Potomac Electric Power Co. to the Federal Power Commission for the year ended Dec. 31, 1976 FPC form 1), p. 431.

RESIDENTIAL ELECTRICITY TAXES

The straightforward approach of adding a tax great enough to raise rates to the marginal cost level would require a tax that varied by the amount of usage and the season since the rates also vary in that manner. Table 2 is the current rate tariff for D.C. residential customers. Ninety percent or more of all D.C. residential sales are on the basic residential R rate schedule for customers without electric space or water heating so this is the schedule that will be considered.

The zero charge on the first 30 kwh per month for this schedule is the result of a minimum $2 charge which includes 30 kwh; this is exactly equivalent to a $2 customer or system charge plus a zero rate on the first 30 kwh because the customer pays $2 whether he uses zero or 30 kwh or any amount in between. A useful feature of this rate schedule is the higher summer rate on usage above 450 kwh per month. Although this rate structure resulted more from social considerations than any analysis of marginal costs, it does reflect the pattern but not the absolute level of marginal costs. That the tail block (that is, usage over 450 kwh) should have a higher price than the preceding blocks is supported by two facts. First, although 65 percent of the customers use under 450 kwh per month, because these customers use smaller than average amounts they account for only 33 percent of residential

[1] Kilowatts are a measure of power or a rate of supplying or using energy. One kilowatt (kw) equals 1,000 watts, so 10 100-watt light bulbs equal 1 kw. The kilowatt hour (kwh) is a measure of energy consumption equal to 1,000 watt hours. A 100-watt light bulb burning for 10 hours consumes 1 kwh.

R kwh sales. Thus, a high tail block rate places the price closer to the marginal cost level where it really matters, that is, the "marginal rate" faced by those customers who account for most of the residential kwh sales. In contrast, the traditional declining block rate structure puts the highest rate on the initial blocks of usage but small volume users, who face high marginal rates as a result, purchase a small part of the total kwh.

TABLE 2.—*Potomac Electric Power Co. District of Columbia residential R and rate schedules* [1] [2]

	Cents per kilowatt-hour
Monthly kilowatt-hour block without electric water heating:	
0 to 30	0
31 to 50	3.55
51 to 200	2.38
201 to 450	2.09
Over 450:	
June to October	2.67
November to May	2.50
Monthly kilowatt-hour block with electric water heating:	
0 to 30	0
31 to 50	3.55
51 to 200	2.38
201 to 700	1.82
701 to 950	2.09
Over 950:	
June to October	2.67
November to May	2.50

[1] Rates do not include fuel cost adjustment of approximately 1.4 cents per kWh. Customer charge of $2.
[2] All electric customers (rate schedule R-AE) pay the same base rates as shown except that the November-May rate is 1.82 cents per kWh for usage over 750 kWh per month for customers without electric water heating and 1.82 cents per kWh for usage over 1,250 kWh per month for customers with electric water heating.

The second important consideration is that, at least in the summer period, most air-conditioning usage shows up in usage above 450 kwh per month, as indicated in table 3. Because air-conditioning "causes" the peak and is therefore associated with higher costs, higher volumes of summer usage should be charged more. From the opposite point of view it is difficult to have much air-conditioning usage without exceeding 450 kwh per month. While a customer without air-conditioning can be consuming the same fraction of his power at peak times as an air-conditioning customer, it is much more likely that a low volume customer has a lower percentage of peak usage.

For both reasons the higher tail block rates are justified. Since the pattern of residential rates is roughly appropriate, it is possible to simply increase the rates by the same percentage through a tax. The summer tail block rates, including the current fuel cost adjustment (FCA) of approximately 1.4 cents per kwh, equals about 5.1 cents per kwh, which is less than the minimum year around average level of the long run incremental residential cost of six cents. This six cent figure itself is at least one cent less than the marginal costs in the summer. Thus, an increase of about 40 percent in the rates would be necessary to raise the summer tail block rate to seven cents.

In addition a forty percent increase would increase the winter tail block rate from 3.9 cents (2.5 cents plus 1.4 cents FCA) to 5.5 cents, and the 201 to 450 kwh block from 3.5 cents to 4.9 cents per kwh. It would also raise the five cent rate (3.6 cents plus 1.4 cents) on the 31 to 50 kwh block to seven cents, a rate which is not consistent

with the other increases but is not of great significance since less than four percent of all bills are for 50 kwh per month or less, and an even smaller percentage of residential kwh sales are made to these customers. The anomalous zero rate for zero to 30 kwh per month would not be changed but this is not a significant problem.

TABLE 3.—AUGUST 1974 AND AVERAGE 1974 MONTHLY DISTRICT OF COLUMBIA RESIDENTIAL SCHEDULE R KILOWATT-HOUR COMPARISONS BY MONTHLY KILOWATT-HOUR BANDS[1]

Monthly Kilowatt-hour band	Kilowatt-hours		Percent by which August exceeds yearly average
	Average per month for 1974	August 1974	
0 to 100	14,930,280	15,025,780	0.6
101 to 200	12,597,850	13,332,790	5.8
201 to 300	9,769,740	11,177,370	14.4
301 to 400	7,335,380	9,219,230	25.7
401 to 500	5,380,970	7,522,830	39.8
501 to 600	3,942,670	6,126,890	55.4
601 to 800	4,934,720	9,081,080	84.0
801 to 1000	2,806,010	6,182,250	120.3
1001 to 1500	3,321,200	8,591,810	158.7
Above 1500	3,234,340	8,345,950	158.0
Total	68,253,157	94,605,980	38.6

[1] Does not include electric hot water or space heating customers.

Applied to all residential rate schedules, a forty percent tax would roughly raise about $15 million based on 1976 revenues. For comparison a two cent per kwh tax would raise about $19 million. These figures overlook the relatively minor amounts already collected by the six percent gross receipts tax (which is included in the rates shown in table 2) and the five percent sales tax (which is not included in the rates of table 2 but is instead added on).

COMMERCIAL ELECTRICITY RATES

The small commercial rates (the general service, non-demand rates—"GS-non-demand") are the rates with simplest structure. There is a monthly customer charge of $4.78 and a rate of 4.28 cents per kwh during winter months and 5.43 cents during summer months. With the fuel cost adjustment included, these rates are about 5.7 and 6.8 cents per kwh respectively.

In order to set the tax level, an estimate of the marginal costs for these customers is necessary. The six cents average yearly level of marginal costs for residential customers is probably close to that for small commercial customers—although six cents is an underestimate for both classes. In comparison to the residential class, the marginal distribution costs per kwh for small commercial customers may be smaller because of the larger per customer usage but the percentage of on-peak usage may be greater because of the tendency of these customers to draw power mostly during the working hours of the day. In the absence of other data it is reasonable to assume that these customers have comparable or perhaps slightly higher marginal costs than residential customers. In that event very minor increases in these rates would be needed. Perhaps an increase of 0.2 cents per kwh to bring the summer rate to seven cents per kwh could be imposed but

further analysis of the data should be conducted before such fine tuning is attempted.

The rates for medium and large commercial customers are complicated by declining block rates and demand charges. Demand charges are imposed on the customer's own maximum kilowatt (kw) demand over any thirty minute period in the month. Depending on the level of the customer's maximum kw demand the demand charge ranges between $4.32 and $3.75 per kw in the winter and between $5.48 and $4.91 per kw in the summer. The kwh rates or energy charges range between 2.2 cents per kwh and 0.985 cents in the winter and 2.8 cents and 1.4 cents in the summer depending upon the amount of usage in total and the amount of usage per kw of the customer's maximum demand. These rates exclude the fuel cost adjustment currently of about 1.4 cents per kwh and a 5 or 10 percent discount on the bill (except the fuel adjustment costs) if the customer takes power at higher voltages.

A minimal estimate of the long run incremental costs for the largest commercial customers is five cents per kwh on a yearly basis, and at least a penny higher during the summer months. The current kwh rates including the FCA clearly fall short of this although in some instances the rates do reflect marginal costs at off-peak periods (a subject discussed below). However, in general kwh rates of approximately two to four cents do not equal marginal costs of at least five cents.

Demand charges

The role of demand charges also must be examined. In fact, maximum demand charges turn out to be extremely high kwh rates. If the demand charge is $5 per kw, then each kwh consumed during the thirty minutes of the customer's maximum demand costs $10! (A demand of 2 kw times 0.5 hour equals 1 kwh.) Marginal costs can reach fairly high levels, perhaps twenty cents during critical periods, but they are not yet $10 per kwh. Thus, during the customer's thirty minute peak demand period, the price per kwh is perhaps 50 or 100 or more times the marginal cost, and at almost all other times the price per kwh is below marginal costs. From this point of view it makes little sense to tax the demand charge as it already exceeds the marginal cost by a great deal.

Among a number of reasons utilities have for using maximum demand charges is that such charges encourage the customer to flatten his load as much as possible in order to reduce the demand charges. The fact that the demand charge is levied on the customer's maximum demand rather than at the time of the utility system's demand insures this. However, it also means that the maximum demand period may not coincide with the system peak demand or with the period of the highest marginal costs. But even as a load leveling mechanism, demand charges have drawbacks. For instance, if a commercial customer, typically an office building, experiences very hot weather (for example, several days of 90 degree plus weather) and correspondingly has a high demand early in the billing cycle, then on the following days before the meter is read, the customer has a reduced incentive to hold down usage regardless of what level marginal costs reach—unless another very hot

spell occurs. Thus, on days when the temperature reaches the middle or upper eighties, the customer could literally cool the building to a lower temperature than during the initial very hot period, without fear of incurring additional demand charges.

Kwh tax calculations

In view of these problems, the relevant place to impose taxes is on the kwh rates and not on the kilowatt demand charges. But because these demand charges are a relatively small part of the total bill, it is possible to raise both the demand and energy charges by a percentage tax. The problem then reduces to determining a single percentage rate by which the kwh charges should be raised. This, unfortunately, is much more complicated for (general service) GS-demand customers than for residential customers because of the wide variation in usage among these customers: GS-demand customers use anywhere from zero to over 3 million kwh per month.

Furthermore, the rate schedule is put together in such a way that customers can easily be in any of the three kwh block rate levels. Actually there are four kwh block rate levels but the first, for usage up to 6,000 kwh per month is the rate for GS-non-demand customers. While most GS demand customers are expected to exceed 6,000 kwh per month, in fact in 1975 about 25 percent of the bills did not, but less than 2.5 percent of all GS-demand kwh sales were on these bills. Although the lowest rate block (2.8 cents per kwh in the summer, 2.4 cents in the winter) is intended as an off-peak rate it can still be the relevant marginal rate for GS-demand customers during system peak demand hours.[1a]

Given a range of 2.8 cents to 4.2 cents per kwh during the summer, it would appear that a 50 percent increase in rates would bring the rates fairly close to a summer marginal cost of six cents per kwh, from 4.2 cents to 6.2 cents per kwh. In the case of large commercial customers provided a 10 percent discount, the existing rates of 2.7 to 3.9 cents would be raised to 4.0 to 5.8 cents per kwh. An increase in winter rates of 50 percent would raise the existing level of 2.4–3.6 cents to a level of 3.6–5.4 cents per kwh. The existing winter rates with a 10 percent discount of 2.3 to 3.4 cents would rise to 3.4 to 5.0 cents per kwh. Based on a 50 percent tax rate and 1975 revenues, the tax yield would be roughly $70 million. If the 50 percent were applied only to the kwh rates and not to the demand charges, the tax yield would probably be around $60 million.

[1a] This lowest rate can only be obtained if the customer exceeds 200 kwh per kw of his maximum demand for large GS customers and 400 kwh per kw of maximum demand for medium size GS customers. In a thirty one day month, the maximum usage per kw would be 744 kwh: 31 x 24 hours per month. A commercial building operating with a flat kw demand from 8:00 a.m. to 6:00 p.m. for twenty-one workdays per month and at no other time would have 210 kwh per kw of demand (10 hours per day times 21 days=210 hours), so—according to the logic behind this "hours use" energy charge—any usage in excess of 200 or so kwh per kw (for 400 kwh per kw for medium size GS customers) is probably going to be off-peak usage. Unfortunately, the level of kwh usage per kwh may not be very relevant to the time of usage. A customer using 100 kwh per kw may be considering an increase in off-peak usage while another customer using 400 kwh per kw may be considering an increase in peak usage. Generally, it would be expected that the higher the kwh consumption per kw, the greater the chance that any changes in consumption would be at off-peak periods, but the proper way to change is by means of time-of-day pricing. In addition, the rate structure appears to make an arbitrary distinction between medium size GS-demand customers who must use 400 kwh to qualify for the lowest kwh rate while larger customers who must use 200 kwh per kw to qualify; yet a customer with usage of 400 kwh per kw is likely to have a greater percentage of off-peak usage than one with 200 kwh per kw.

Alternatively, and with more logic, a two cents per kwh tax would yield about $80 million. Under this approach the summer rates of 2.8 to 4.2 cents would increase 4.8 and 6.2 cents, and winter rates of 2.4 to 3.6 cents would rise to 4.4 to 5.6 cents per kwh. For large commercial customers served at the highest voltage with a 10 percent discount, the summer rates of 2.7 to 3.9 cents would rise to 4.7 to 5.9 cents per kwh, and the winter rates of 2.3 to 3.4 cents would increase to 4.3 to 5.4 cents per kwh.

Some of the problems in establishing taxes on these rates may be eliminated in the near future because the D.C. Public Service Commission is in the process of studying time-of-day electricity pricing for the 200 or so largest D.C. commercial customers. It is well known that the marginal cost of power varies with the load on the utility, generally being highest at peak demand times and lower otherwise. If time-of-day pricing is instituted for these largest customers, rates would vary more in relation to cost than they do now. Since past actions of the Commission indicate that they support average cost pricing rather than marginal cost pricing, the rates which are used in this time-of-day price schedule will probably be too low. In addition, it is likely some form of demand charges will also be retained. Therefore, although time-of-day pricing will probably simplify matters, the need for a kwh tax will most likely not be eliminated.

THE TAX YIELD AND IMPACTS ON AFFECTED GROUPS

Although the estimates above are somewhat inexact, the tax yield from raising rates for residential, and medium and large size commercial customers (but not small commercial customers) would be on the order of $70 to $100 million, and would be in addition to the relatively minor amounts of a few million dollars now collected (approximately $15 million in 1976) from the 6 percent gross receipts tax which is already included in the rates. The 5 percent sales tax which raises about $6 million has been ignored in this calculation since it raises significantly less than the gross receipts tax.

Not only would this be a large increase in the tax burden but for residential customers it would be a regressive tax. The data in table 4 indicate the level of regressiveness is not extreme; low income customers on average use less electricity than higher income customers,[2] a result also obtained on a nationwide survey.[3] Nevertheless, kwh usage does not appear to be proportional to income so a tax on electricity would be a greater percentage of the income for a low income user than a high income user.[4]

Little is known about the usage levels, the variation in usage levels with income, or the heating usage (amount of electric space and water

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[2] The data in table 4 also provides support for the higher residential summer tail block rate of 3.67 cents per kwh. Higher income, high volume use customers have much sharper summer demands increases than low income, low volume customers. The cause of these summer peaks is primarily air-conditioning.

[3] Dorothy K. Kewman and Dawn Day, "The American Energy Consumer," A Report to the Energy Policy Project of the Ford Foundation (Cambridge, Massachusetts: Ballinger Publishing Company, 1975), p. 90.

[4] The variation in kwh usage by income level does not tell the entire story on regressiveness. Because of the $2.00 customer charge and declining block rates up to 450 kwh per month, the bill for 200 kwh per month ($6.28 without the FCA and sales tax) is more than one-half of the bill for 400 kwh per month ($10.46). Above 450 kwh, residential D.C. rates increase so the dollar amounts do tend to become proportional to usage.

heating) of the households in mastered-metered apartment buildings. Currently, the D.C. Public Service Commission is conducting a study of usage patterns in master-metered units with an eye to lowering their electricity bills. Since the PSC has already established lifeline-like rates for individually metered residential customers the concept is to provide similar treatment for master-metered apartments.[5]

TABLE 4.—RESIDENTIAL ELECTRICITY CONSUMPTION AND RELATED INCOME

	Characteristics		
	D.C. low-income area	D.C. high-income area	Montgomery County high-income area
Average monthly consumption for 1974 (kilowatt-hours)	294	728	844
August 1974 consumption (kilowatt-hours)	358	1,059	1,314
Percent by which August consumption exceeds average monthly consumption	21.8	45.5	55.7
Average family income, 1970	$7,840	$24,600	$20,400
Average household income, 1970	$5,500	$14,900	$20,600

Notes: District of Columbia low-income area consists of census tracts 35, 36, 37, 43, 44, and 45; District of Columbia high-income area—census tracts 9, 10, 11, 15, and 16; Montgomery County, Md. census tracts—7033, 7044, 7045, 7046, 7047, and 7052. Kilowatt-hours consumption is for all individually metered residential use (including electric space and water heating). Therefore, usage in master-metered apartment buildings is excluded.

It is possible to reduce the electricity tax burden and its regressiveness by reductions in the general sales tax, the D.C. income tax, and other taxes and by increases in expenditure programs such as energy stamps, welfare programs, and so forth. As the sales tax is regressive, a reduction in it might be an appropriate offset (particularly since most goods have pre-sales tax prices above their marginal costs) but much of the D.C. sales tax revenue is paid by nonresidents who would then receive the benefits of any reduction. A credit for D.C. income taxes would be better but separate provision would have to be made for those, such as welfare recipients and retired persons, who pay no income tax. This latter defect could be overcome by allowing all residents to obtain the credit in cash even if no income tax is paid.

For a relatively small initial increase in the tax on electricity (as recommended below), an income tax credit might well be an acceptable method to offset its regressiveness. However, for larger increases, a more direct approach is needed to take into account the difference in usage by types of appliances. A D.C. residential customer without electric space or water heating uses about 450 kwh per month; the average for residential electric water heating customers is nearly 1000 kwh; and it is 1700 kwh for all electric residences. Although there are very few electric space and/or water heating residential customers in the District of Columbia, nevertheless, some adjustment should be made for these customers when taxes are raised significantly.

To do this, part of the additional tax revenues should be refunded to residential customers as fixed or lump sum refunds or rebates. These refunds should be related to the customer category, with a higher refund for existing all electric and electric water heating customers

[5] Lifeline rates are rates on low and moderate amounts of monthly usage that have been set low for the specific purpose of assisting low volume customers. As is indicated above, there may be very valid economic justifications for such rates even though the concept of life line rates is usually advanced on the basis of alleviating the financial burden on low volume customers.

than to other residential customers. Naturally, these refunds would not vary as the individual customer's consumption changed. Such direct refunds would tend to make the tax highly progressive. If the direct credit is $5 per month, then a small volume customer with an electricity tax of $8 would have a much lower net tax ($3) than a larger volume customer in the same category with an electricity tax of $16, or net tax of $11.

Aside from rebates and reductions in taxes, the existing electricity taxes and any tax increases can be made more effective and less regressive by removing the taxes from the customer charge, and, if necessary, from a relatively low amount of monthly usage. In 1976, there were about 161,000 individually metered residential customers in D.C. At $2.00 per customer per month, the total annual revenue from the customer charge would be nearly $4 million ($2×12 months×161,000 customers=$3.86 million). A 40 percent gross receipts tax would amount to about $1.5 million. Since the customer charge does not vary with usage,[6] there is no reason to impose any tax on it, and such a tax is severely regressive as well.

Naturally, it is desirable to raise all rates to the marginal cost level but if the size of the tax increase is limited initially or if there is no other way to offset the regressive impacts of an electricity tax (that is, if rebates and reductions in other taxes are ruled out or constrained for any reason), then elimination of the tax on the first two or three hundred kwh per month is a reasonable step. The amount of kwh sold on bills of 200 kwh or less per month to non-heating D.C. residential R customers in 1975 was under 8 percent of the total. The corresponding figure for bills of 300 kwh or less per month is 17 percent. Therefore, very little of the total usage would be affected by dropping the taxes, existing or proposed, from the first 200 or 300 kwh of monthly usage because the marginal rate for most residential customers and most residential usage exceeds those amounts. For electric heating residential customers, their usage generally exceeds that of non-heating customers in every month of the year, so a reduction in taxes on a higher amount of usage is possible for them.

Other schedules show even stronger tendencies for the concentration of kwh sales on the larger size bills. Only 7 percent of the GS-demand kwh sales appear on bills for 10,000 kwh per month or less, even though the median use for this class is not much above this level of usage. (Average use in 1975 was 36,500 per month for GS-demand customers without electric space heating.)

Eliminating taxes on customer charges and relatively low volumes of electricity usage not only holds down the revenue impacts but significantly reduces the regressive impact of electricity taxation without giving up much of the effectivenes in achieving energy conservation. Customer rebates can also do this but if such rebates are not permitted or if the tax level is held below the amount necessary to set rates at marginal costs, then careful tax design would be important to achieve the maximum effectiveness with the least impact on low income customers.

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[6] A higher customer charge can have a minor effect (the "income effect") on electricity consumption by reducing disposable income.

These tax design considerations may also be relevant for commercial customers for whom a 50 percent increase in electricity costs could be significant. Electricity for large office buildings represented about 24 percent of their total operating expenses and 10 percent of their gross rental income in 1975.[7] An additional 50 percent increase in electricity costs would probably not lead to an actual exodus of commercial customers but perhaps to some slowing in the growth rate. However, other tax increases, particularly the professional income tax, whatever their impact, have not stopped growth. Some part of the increase in electricity costs might be absorbed by lowered land values rather than increased rental rates. In any event, partial rebates would lessen the impact as well.

The reduction in sales due to the tax on the kwh rates could in the short run reduce PEPCO's revenues more than their expenses. If significant, this would require higher rates to be changed by PEPCO. There are several reasons to believe this would not be significant.

First, the loss of sales revenue from reduced sales is likely to be quite small initially with the major impact taking place over a period of years. However, only the short run is of concern since the long run reduction in costs per kwh exceeds the revenue per kwh PEPCO receives; the long run cost savings equal LRIC but PEPCO's rates would be less than LRIC by at least the amount of the tax per kwh.

Second, it is difficult to put much evidence in this argument in view of the past history of rate increases: from 1973 to 1976 the average revenue per kwh rose by more than 70 percent (and the kwh rates rose even more), yet sales in 1976 were nearly equal to those in 1973 despite a cooler summer and a warmer winter in 1976.[8] Other factors such as increased numbers of customers, higher per capita incomes, increased business activity and more all-electric customers tend to offset the effect of higher prices so any reduction would be dampened. Since the proposed tax increases would be spread out over several years it is unlikely the actual loss in revenues in the short run would be very limited.

Naturally, the relevant comparison is between the base rates PEPCO would need with, and without, the tax. Although the longer run rates would be lower with a tax imposed, the short run rates could be higher but, as argued already, this difference is likely to be small. However, even higher rates in the short run may not be a real burden. If sales revenues decline 2 percent in the short run (below what they would otherwise have been) but expenses decline only 1 percent in that same short run period, then the cost per kwh would increase about 1 percent relative to the result without any tax. This does not mean consumers are worse off. In fact, their electricity bills are actually lower by the 1 percent savings in costs; the average rate has increased 1 percent but the amount purchased has dropped 2 percent. And certainly in the long run the rate per kwh would be lower with the tax imposed.

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[7] Apartment and Office Building Association of Metropolitan Washington, "Experience Exchange Report: Office Building Operations—1975" (Washington, D.C.), Chart I.

[8] This is not to say that there is no price elasticity present. For example, per capita residential usage has decreased but the number of customers has increased about 2.5 percent over the three year period. Furthermore, the relevant comparison is between actual consumption in 1976 and the consumption that would have resulted in 1976 if prices had not been increased—not between actual 1973 and actual 1976 consumption. One can also assume that several years are needed for such a price increase to have its full impact.

But if the short run increase in the rates is unacceptable, it is possible to decrease the tax rate accordingly. In the example in the preceding paragraph, a 1 percentage point decrease in the tax rate would offset that short run increase in the rates.

Nor is the long run necessarily five or ten years off into the future. Short run sales reductions can often lead to a fairly rapid decrease in "fixed costs." Reductions in capital expenditures for generation, transmission and distribution plant can often be undertaken rapidly. Most transmission and distribution projects do not take over three years to complete so any reductions in short run consumption can be reflected in these expenditures rather rapidly. Generation plants take longer to build but their construction can be slowed down with corresponding savings. Portions of plant and equipment can also be leased or sold to other utilities. For example, PEPCO has recently sold to Baltimore Gas and Electric half interest in its 800,000 kwh Dickerson Unit No. 4 plant to be completed in 1983. In this manner even short run sales reductions can lead to rather rapid decreases in so-called long run fixed costs.

It seems reasonable to conclude that short run revenue decreases due to higher taxes are likely to be small, especially so in view of rate increases that have already been imposed in the last three or four years and in view of the long run benefits that would result.

BENEFITS OF HIGHER ELECTRICITY TAXES

Most analyses of electricity consumption indicate that the long run (perhaps five years or more) price elasticity for electricity is around, or perhaps above, one,[9] which means that a 1 percent increase in the price of electricity leads to a 1 percent reduction in consumption over the long run if all other things remain the same. As the price of electricity goes up, the price elasticity probably declines as well, especially for a 40 or 50 percent increase in price. Nevertheless, this level of price increase should reduce growth by at least 30 or 40 percent. This does not necessarily mean that growth will be halted or that sales would decline by 30 percent below the existing level; instead sales would be 30 percent less than otherwise would have resulted. New customers, growth in incomes, rises in business and government activity also increase electricity consumption over time so growth might occur, but at a slower rate.

Assuming that the percent of generating capacity required by D.C. customers is equal to their share of total kwh sales, 41.9 percent of PEPCO's 5,013,000 kw generation capacity or 2,100,000 kw should be allocated to D.C. customers. A saving of 30 percent of this amount is equal to 630,000 kw (0.3 × 2,100,000). At a cost of $830 per kw (a coal burning plant at the Dickerson Unit 4 cost) the saving is $523 million (630,000 kw × $830), or $2,800 per existing D.C. customer ($523 mil-

[9] There are numerous demand elasticity studies of electricity. For a review of some of these see B. M. Mitchell, J. P. Acton, and R. S. Mowill, "Selected Econometric Studies of the Demand for Electricity:" Review and Discussion, p–5544 (Santa Monica, California: The Rand Corporation, November 1975); L. D. Taylor, "The Demand for Electricity: A Survey," The Bell Journal of Economics vol. 6, no. 1 (Spring 1975), pp. 74–110; Charles River Associates, "Long Range Forecasting Properties of State-of-the-Art Models of Demand for Electric Energy" (Palo Alto, California: Electric Power Research Institute; December 1976); and Data Resources, Inc., "The Residential Demand for Energy" (Palo Alto, California: Electric Power Research Institute; January 1977).

lion/187,000 customers). If the annual carrying costs for depreciation, interest, taxes, and profit are 20 percent of this, then the capital cost saved will be $560 per customer per year.

These estimates exclude the incremental capital cost savings from transmission and distribution plant of perhaps $400 per kw, or a total of $250 million (630,000 kw × $400). This equals about $1,350 per customer ($250 million/187,000 customers) or roughly $270 per customer per year ($1,350 × 0.2).

Of course, these are gross saving estimates as they take no account of customers' investments in more efficient appliances, increased insulation, and other conservation measures. However, even if all the savings resulted from increased conservation investment, there would still be considerable net capital savings because consumers would not make such investments unless it paid them to do so. Some of the savings would result from simply cutting back on usage without purchase of any new equipment.

New generating plant probably would be somewhat more efficient than existing plant so some fuel cost savings might result even if the new generating plant is not required or justified. In a system with the appropriate mix of base load and peaking type generating plants, a new base load plant would not displace an existing generating plant but would be needed to satisfy demand growth. Thus, such benefits would be negligible. Alternatively, if the plant does displace an older base load plant which in turn is used to meet peak loads, then some account should be taken of the fact that the capacity factor for the displaced generating plants has dropped.

The easiest way around this problem is to compare the existing average costs for power with the incremental costs. Total PEPCO 1976 electric revenues of $547 million divided by total kwh sales of 14.3 billion kwh indicated an average rate of less than 3.8 cents per kwh, perhaps 3.5 cents per kwh, in contrast to an incremental or replacement cost of at least 5 cents per kwh. Current (1976) D.C. kwh sales are around 6.0 billion kwh. A savings of 30 percent of this amount would equal 1.8 billion kwh. At five cents per kwh, the gross cost saving is roughly $90 million per year, or about $480 per customer annually. The extra 1.8 billion kwh is only consumed because the price is 3.5 cents per kwh instead of five cents per kwh; that is, consumers value the extra 1.8 billion kwh at less than 5 cents, on average at about half way between the cost and the price, or 4.25 cents per kwh (5 + 3.5)/2). Thus, the net loss is 0.75 cents (5 cents less 4.25 cents) times 1.8 billion kwh, or $13 million per year, which is $70 per customer annually ($13 million/187,000 customers).

Implementing the tax on electricity in a series of steps over a period of several years would delay the realization of the full benefits. This lag could be minimized by announcing the intended plans to raise the rates to marginal cost levels so that customers anticipate these higher prices in buying new equipment, insulating, etc.

Of course, marginal costs are likely to be found, upon more thorough investigation, to be higher than estimated in these calculations. In that event, benefits would be even greater if taxes were increased to bring the price of electricity to those higher levels of marginal costs. No growth in consumption is assumed in the calculation of benefits.

The 30 percent saving is calculated on the basis of existing consumption, but considerable growth would occur if rates follow the present course. It is not unusual for utilities to expect a growth rate of 4 percent per year. At the end of five years, D.C. sales compounded at 4 percent per annum would be greater by 22 percent, or about 7.3 billion kwh (6.0 billion kwh × 1.22) rather than 6.0 billion kwh. The gross savings would be 22 percent greater (7.3 × 0.3 = 2.2 billion kwh), or equal to $110 million per year (2.2 billion kwh × 0.05). The net savings also increased by 22 percent, would be $16 million per year (2.2 billion kwh × 0.75 cents).

One of the effects of higher electricity rates is that it might encourage more sales and imports of oil for heating in the District of Columbia. Many of the new homes and buildings are using electricity for space and water heating but the total of this usage is still not very great. However, a tax on natural gas would lead existing customers to conserve gas which could be released for home heating in place of oil. Decontrol or taxation of petroleum, as proposed by President Carter, would raise the price of fuel oil and thereby reduce usage and imports. Nor can it automatically be assumed that increased sales of oil are undesirable, especially if the U.S. maintains a stockpile to discourage future supply interruptions.

The needle peak problem

Higher marginal cost based rates have also been criticized on the grounds that they might produce needle peaks. The needle peak hypothesis is based on the assumption that at peak periods customers facing higher prices reduce consumptions by a smaller percentage than at other periods, reducing the utility's kwh sales by more than peak demands with a resulting drop in the utility's load factor. Because utilities build capacity largely in response to peak demands, this means that the costs of new plants would not be avoided by higher prices.

However, the underlying logic of the needle peak hypothesis does not seem very strong. The expected response to higher prices is to set the air conditioner to a higher room temperature, say 78° instead of 74° F. Thus, demand on the peak days would be reduced by the same amount as on the other days. In contrast, the needle peak hypothesis evidently presumes that consumers would lower the temperature more on the hottest peak days than on other days; for example, to 74° F on the peak days but to 78° on other days. This pattern of behavior does not generally seem very persuasive. Furthermore, electricity rates in other months are below the summer rates. This relative price differential would tend to move usage into non-summer months and actually improve the load factor for the utility. In the longer run and high summer rates would encourage customers to buy more efficient air-conditioners, which would certainly help reduce peak demands.

Aside from these and other points that could be made, the actual record for PEPCO, in the absence of any econometric analysis of the data, does not indicate that the load factor is dropping off despite sizable increases in the rates since 1973. In 1973 the average residential revenue was 2.63 cents per kwh and the load factor was 47.3 percent. As the revenue moved up to 4.16 cents per kwh in 1976, the load

factor dropped to 46.3 percent in 1974, 46.8 percent in 1975, but increased to 50.2 percent in 1976. Although these figures are dependent upon summer temperatures, the 1976 summer was considerably hotter than the 1972 summer (9,180 cooling degree hours in 1976 versus 6,687 in 1972), yet the load factor was only 46.6 percent in 1972. Indeed, no pattern is really discernible despite the rapid increase in the kwh price: the 1976 load factor exceeds that of 1965 and 1966 but is lower than that of 1970 and 1971. Although a long term decline in PEPCO's load factor may be present, the data do not seem to indicate the presence of any sore of needle peak trend.

Subsidization of suburban growth

An important issue is to ensure that the benefits of conservation do not flow to the suburbs. The problem arises because suburban growth, which is more rapid than that in the District of Columbia requires that new and very expensive generating and transmission plants be built. In the extreme, if the District of Columbia usage did not grow so no new capacity were needed for those customers while growth continued in the suburbs, the plant cost investment per unit of capacity would rise, because of inflation, and be passed on to District of Columbia customers, who would not be responsible for these costs. Even though District of Columbia usage does grow, the more rapid growth of suburban usage still creates a cost burden for District of Columbia customers.

The following hypothetical set of data may clarify the problem:

Year	Total generating plant investment	Total kilowatt-hour sales	District of Columbia		
			Kilowatthour sales	Percent of total sales	Allocated share of generating plant investment
1	$1,000	100	50	50	$500
5	$4,000	200	50	25	$1,000

Here, the generating plant investment is allocated on the basis of sales share, which is not the exact method used by PEPCO to allocate plant investment among the jurisdictions but approximates it. In year 1, the D.C. sales share is 50 percent, so one-half of the investment is allocated to D.C. customers ($0.5 \times \$1,000 = \$500$). By year 5 total sales have doubled but, because of inflation, generating plant investment has gone up by a factor of four. It is assumed that D.C. sales do not increase in that period, so the D.C. share of sales is 25 percent (50/200). Based on the share of sales allocation method, D.C. customers are allocated 25 percent of the $4,000 investment, or $1,000 which is $500 more than in year 1. However, this increase is attributable to suburban growth. D.C. sales did not increase and, aside from any minor replacements (which are ignored in this example), D.C. customers did not need additional plants and should not be required to help pay for them; the D.C. share of the investment should remain at $500. Such over-allocation of investment to D.C. customers occurs as long as the growth rate of D.C. is less than the average growth rate for the entire system.

The over-allocation of investment to D.C. customers arises because of suburban growth, inflation, and the method employed in the allocation process. Without suburban growth no additional generating plant investment would have been required. In the absence of inflation the total investment at the end of year 5 would have been $2,000, and the D.C. share would have remained at $500 (because .25×$2,000=$500). If the additional investment had been allocated on the basis of the change in demand, the problem would not arise either.

To illustrate this problem with actual data, consider the figures in table 5. Based on the 1976 D.C. share of total kwh sales (41.92 percent), the D.C. portion of the generation plant investment would be $346.7 million (0.4192×82.70 million). However, suppose that in 1970 a separate D.C. subsidiary ("D.C. Electric") of PEPCO had been established to estimate the generating plant needs for D.C. customers alone.[10] This does not mean that D.C. Electric would have attempted to build generating plants for its own needs only or to exclusively utilize existing plants located in the District of Columbia, but that it would obtain its needs from plants built jointly with the other PEPCO subsidiaries serving the D.C. suburbs.

TABLE 5.—ALTERNATIVE METHODS OF ALLOCATING GENERATING INVESTMENT TO DISTRICT OF COLUMBIA CUSTOMERS

	Kwh Sales (millions of killowatt hours)		
	Total system sales	District of Columbia sales	District of Columbia share of sales (percent)
1976	14,339.4	6,010.6	[a] 41.9
1970	12,122.0	5,392.4	[a] 44.48
Difference	2,217.4	618.2	

$$\text{Ratio:}\frac{618.2}{2,217.4} = {}^{c}\,0.2788$$

Allocation of Generation Rate Base Investment to District of Columbia Customers by Average Sales Method

			District of Columbia share of sales		Allocated investment
1976 investment	$826,954,000	×	[a] $0.4192	=	[d] $34,659,000
1970 investment	471,620,000	×	[b] $0.4448	=	[e] 209,777,000
Difference	[f] $355,334,000				

[10] The year 1970 was selected as the base year because about that time plant costs started rising. A selection based on this criterion does raise a related issue, namely, that the sales share method of allocation may have at one time disproportionately aided D.C. customers. In earlier pre-1970 years the cost of plants was declining and the D.C. share of the sales was dropping so the reverse bias from that indicated in table 5 would have occurred; the sales share method of allocation would have provided a smaller portion of plant investment to D.C. customers than an allocation based on growth.

However, there are several factors which tend to limit this benefit. First, in earlier days rate hearings and increases were much less frequent so the benefits of lower cost plants may not have been passed on in any event. Second, the savings involved may have been much less because the cost drop was quite limited. (It was much greater in constant dollar terms but that is not relevant where rates are based on original costs in undeflated terms.) Finally, agreements which do not benefit both parties involved are usually not made. The responsibility for changing an agreement which is disadvantageous to one side lies with that party. At this point in time it is very disadvantageous for D.C. customers to continue the existing arrangement; it is up to them to end this "bad deal," just as it was up to suburban customers to have guarded their interests in earlier periods.

In any event it would be useful to reconstruct the benefits both positive and negative of these jurisdictional plant allocation methods over the last thirty or forty years.

Allocation of Generation Investment to District of Columbia Customers by Sales Growth Increment Method

1970 District of Columbia investment		Allocated portion of increase		Allocated investment
[e]$209, 777, 000	+	([c] 0. 2788×[f] $355, 334, 000)	=	[g] $308, 844, 000

Comparison of the Alternative Methods of District of Columbia Generation Investment Allocation

Average sales method	[d] $346, 659, 000
Growth basis	[g] 308, 844, 000
Difference	37, 815, 000

Note: Superscript letters are intended to help trace the origin of the numbers.

On this basis only that portion of the new generating plant investment equal to the fraction of the total sales increase would be allocated to D.C. customers. Since D.C. kwh sales growth from 1970 to 1976 was 27.88 percent of the total, only that percent of the $355.3 million generating plant investment from 1970 to 1976, or $99.1 million ($355.3 million×0.2788) would be allocated to D.C. Electric. Under this procedure the total generating plant investment allocated to D.C. Electric would be $308.8 million ($209.8 million plus $99.1 million). The difference in the two allocation treatments is $37.8 million. At a fixed charge rate of 20 percent, the difference is $7.6 million per year.

This may not be a major amount per year but does illustrate the problem involved, namely that of averaging the cost of all generating plant investment across all three jurisdictions penalizes D.C. customers, or, in effect, D.C. customers help subsidize suburban growth.[11] The calculation is not exactly that used by PEPCO but is indicative of the amounts and methods involved. The estimate leaves out the inflation penalty to D.C. customers for transmission investment. In addition, since many other costs such as depreciation expenses, parts of operating and maintenance costs, general plant (overhead) investment and expenses are allocated according to the allocation of transmission and generation investment, there are other costs unfairly placed upon District customers.[12] There might be some fuel savings offset because the newer plants could be more offset because the newer plants could be more efficient but, in fact, the fuel efficiency of PEPCO's generating units brought on line in the past few years has been declining.

It is also rather disturbing that much of the generating capacity added in recent years has proven to be unneeded. If suburban growth had kept pace with earlier expectations, then a larger share of the

[11] Of course, customers in well settled, long established Maryland and Virginia areas may not wish to subsidize growth in rapidly growing Maryland areas either and the regulatory commissions in Virginia and Maryland may want to take these factors into account in some manner, perhaps by means of a hook-up charge for newly constructed homes and commercial buildings.

[12] Accumulated depreciation and depreciation expense are allocated among the three jurisdictions as if the average age and cost of the distribution plant (transmission and generating plant as well) were the same in all three. (See "Direct testimony of Frederick J. Wells, on behalf of Intervenor, Consumers Union," (pp. 21–23) in D.C. Public Service Commission Formal Case 610, 1974.) However, as the D.C. Public Service Commission has recognized in the case of Washington Gas Light Company, Order No. 5833 relating to Formal Case No. 647, this is very unlikely; the equipment serving D.C. customers is older, more depreciated and has a smaller depreciations expense. Presumably, the Commission will eventually start an investigation of this matter for PEPCO to parallel its study of WGL.

plant investment would have been allocated to the suburbs under the sales share method than the results in table 5 indicate. An acceptable upper level of reserve capacity (net generating capability divided by the system peak demand) is around 20 percent. In 1970, the reserve capacity was 20.5 percent (3,504,000 kw/2,908,000 kw, less one); in 1976 the reserve capacity reached 43.2 percent (5,013,000/3,500,000 less one) due partly to unanticipated demand growth reduction. Based on a 20 percent reserve, a 1976 capability of 4,200,000 kw would have been sufficient. The cost of excess capacity of 813,000 kw was averaged across all customers, not in proportion to the expected use of that capacity. Since suburban usage has been growing much faster than D.C. usage, most of that excess capacity was built for suburban customers and should not have been allocated to D.C. customers.

Estimates of future subsidies by D.C. customers

However large the existing subsidy paid by D.C. customers to support the cost of additional plant for suburban growth, the real dollar burden is ahead since new generating and transmission plants will be much more expensive than those previously constructed. The existing average cost of generating capacity is $165 per kw. For the most recent steam plant at Chalk Point, it was about $290 per kw. The next Chalk Point unit will be $320 per kw but the unit beyond that, Dickerson No. 4, a coal unit to be completed in 1983, is estimated at $830 per kw. The first Douglas Point plant a nuclear unit, to be completed by 1987 is expected to be at least $1,100 per kw. Therefore, even though the present averaging methods of allocating costs have already penalized D.C. customers, the real impact of this averaging approach is yet to be felt.

It should be noted that whether or not a larger tax is imposed on electricity sales, the growth rate for the District of Columbia will continue to be below that for suburban customers. The question is whether any, or how much, of the future generating plant capacity will be needed for D.C. customers. Assuming a 4 percent growth rate in D.C. demand without the tax, D.C. customers should only pay about $14 million of the investment cost of Chalk Point No. 4 rather than the $78 million the existing allocation method would impose on them.[13] Therefore, even without any attempt to bring electricity rates up to marginal cost levels, it is clear that there is a need to exclude portions of expensive new plants which D.C. customers do not require.

However, the desirability of protecting D.C. customers is even greater if the kwh rates are increased by means of a tax. At a 4 per-

[13] Above it was calculated that for a 20 percent generating reserve, the total capacity needed to meet the 1976 total system demand peak of 3,500,000 kw (3,500 megawatts) would be 4,200 mw (1.2×3,500 mw) and the remaining capacity of 813 mw (5,013 mw minus 4,200 mw) is not needed. Based on the 1976 share of D.C. sales, 41.92 percent, the D.C. share of the 4,200 mw is 1,761 mw (4,200 mw×0.4192). At a 4 percent annual growth rate, D.C. would need an additional 381 mw by 1981, the completion date for Chalk Point No. 4 (1,761 mw×$(1.04)^5$=2,142 mw, less 1,761 mw equals 381 mw). However, D.C. customers have been paying for the existing excess capacity, of which their share is 341 mw (813 mw of excess capacity×0.4192). Thus, only 40 mw (381 mw less 341 mw) of new capacity (excluding existing plant retirements, which are likely to be minor) would be needed for D.C. customers by 1981. This is but 7 percent of Chalk Point No. 4's total capacity of 600 mw (600 mw×.07=42 mw). Under the existing averaged-in basis, D.C. customers might have to pay about 40 percent of this plant which has a total estimated cost of $194 million. Seven percent of the cost is about $14 million while 40 percent is $78 million, a difference of $64 million.

cent annual growth rate, the current D. C. demand would increase total demand by about 22 percent in 1981 ($1.04^5 = 1.22$). But a kwh tax increase imposed on 1978 might eliminate a good part of this. If a full 30 percent reduction in D.C. sales occurred by 1983, the calculated increase in D.C. sales from 1976 to 1983 or 32 percent ($1.04^7 = 1.32$) could be almost completely offset. In this case there would be no need for D.C. customers to pay any of the costs of either Chalk Point No. 4 or Dickerson No. 4, especially in view of the fact that the D.C. shares of existing excess capacity is about 340 mw. Under current practices, the investment over-allocation to D.C. customers could be $190 million for Chalk Point No. 4 and Dickerson No. 4.[14] At an annual fixed charge rate of 20 percent, the annual excess burden to D.C. customers would be about $40 million.

The D.C. Public Service Commission can easily protect D.C. customers from being charged for these costs by merely excluding such plants from the rate base investment upon which electricity prices are calculated. Because the commission allows construction work in progress into the rate base, D.C. customers may already be paying for the costs of future plants they may not need. As of the end of 1976, $205 million had been expended on Chalk Point No. 4 ($97 million) Dickerson No. 4 ($74 million) and Douglas Point No. 1 ($34 million), and much of this is probably already in the allocated share of the rate base for D.C. customers. Another $187 million will be expended on these plants in the next three years (1977–1979) so consideration of these matters should not be put off.

As suggested above, many other costs are allocated on the basis of the generation rate base. Transmission costs should also be analyzed from the point of view of the needs of D.C. customers rather than on the averaged-in procedure now employed. Because of these factors and others already mentioned, it is important that the commission reconstruct what would have happened if there had been a truly independent subsidiary serving D.C. customers. This D.C. Electric subsidiary should be envisaged as having the power to make joint agreements with the PEPCO divisions serving the suburbs in constructing the existing and future plants and having the power to keep separate records concerning depreciation and other expenses.

In addition, a separate estimate of future growth of D.C. electricity demand—based on the best econometric techniques and data—is needed to determine what additional capacity, if any, D.C. customers may need. It may turn out, especially if a tax on electricity is imposed, that D.C. does not require much additional capacity. The unwillingness of D.C. customers to help pay for suburban growth might require cancellation or delays in PEPCO's construction plans but that should not deter the commission in disallowing those unnecessary plant investment costs.

One other issue should be discussed. Just as it is possible to allocate the costs of growth to the various jurisdictions according to their

[14] If by 1983, the District's share of sales were around 35 percent of the total, then the allocation of Dickerson No. 4 plant costs to the District of Columbia would be about $112 million, that is, $0.5 \times \$667$ million $\times 0.35 = \$112$ million. (The 0.5 factor represents the fact that PEPCO has sold half interest in this plant to Baltimore Gas and Electric.) Adding this $112 million to the $78 million allocated by the sales share method to the District of Columbia for Chalk Point No. 4, the total investment over-allocation is $190 million.

growth rates, it is also possible to allocate them among customer categories in each jurisdiction on the basis of growth. This could even be applied at the individual customer level. The question is: if it is acceptable to allocate investment costs on the basis of jurisdictional growth, why should it not also be reasonable to allocate these costs on the basis of customer class growth or individual customer growth as well? There would seem to be no inherent reason to distinguish these cases. If one class of customers in a jurisdiction has been growing more rapidly than others, then customers in the less rapidly growing classes can argue with the same logic that the increase in costs per kwh has been disproportionately caused by the more rapidly growing customer class and that the allocation of additional plant investments should recognize this. Similarly, subsets of customers and individual customers can make this argument as well.

Of course, the more rapidly growing customers and classes of customers can counter-argue that if the other classes and customers had decreased their usage, then the problem would not have arisen either. From this point of view both those who increased and those who did not increase their usage are equally responsible for the expensive new capacity.

Perhaps the one thing which distinguishes the allocation of plant investment by jurisdictional growth from the allocation on the basis of customer or class growth is that there are three separate regulatory bodies involved, and each has the responsibility to protect the customers in its own area. Thus, there is a natural basis for such a distinction although it is based on the historical "accident" that the PEPCO service area falls into three jurisdictionals. If PEPCO provided service in a single jurisdiction under just one regulatory body, then allocating plant investment on the basis of geographical location might not be as obvious or "natural" an approach.

In contrast, if a separate power company had been formed to supply the District of Columbia alone, then the issue of D.C. customers subsidizing suburban growth would not have arisen. However, somehow or other, customers should not have to pay higher rates merely because the utility company serving them covers too large an area. (Customers in suburban growth areas might object that they should not have to pay higher rates simply because the utility serves too small an area but this argument involves including customers (namely, low growth rate customers) who would not freely choose to be served by that same utility; it would only seem reasonable to join areas together when the customers agree to it, not when some of them must be forced against their will.) However, certain individual customers (those whose usage has not increased as much as the average) might, on the same grounds, also demand to be treated as if they were each served by an individual electricity company in an analogous fashion to D. C. Electric for the District customers as a whole.

Clearly, there is much that is arbitrary in allocating the property rights to "cheap" electricity among jurisdictions and customers. Nevertheless, historical accident or not, District customers should be protected by the D.C. Public Service Commission against the costs of suburban growth.

RECOMMENDATIONS

If nothing else, it makes sense to remove from electricity purchases the 5 percent sales tax, paid by only some customers, and replace it with a 5 percent gross receipts tax paid by all customers. This additional 5 percent gross receipts tax would increase the existing gross receipts tax rate to 11 percent and yield an extra $6 million.

It is possible to continue increasing the gross receipts tax by a series of steps over time to about 50 percent. However, because of the block rate structure and other features of electricity tariffs, a better approach would be to treat each class individually; some classes such as small commercial (non-demand metered) customers have rates much closer to marginal costs than others. It would also appear more reasonable to use a specific cents per kwh tax than a percentage ad valorem tax. Such an approach would avoid taxing customer and demand charges which should not be increased in any event. However, as an interim step before more comprehensive tax restructuring, it is possible to simply increase the gross receipts tax by some small amount above 11 percent. This would also avoid the problem that arises because sales to the government and certain other exempt customers can only be taxed by means of the gross receipts tax. Taxes other than the gross receipts tax probably preclude taxation of these exempt sales.

Because a kwh or gross receipts tax on electricity is regressive, impacting harder on small volume, low income, customers, any increase in taxes above the existing level should be accompanied by some partially offsetting recycling of the tax revenues. This can be accomplished by direct funds, by reduction in the general sales tax, individual income tax or some other regressive tax, and by direct funding of low income programs. Direct refunds are probably the best approach since they can be tailored to specific customer types (for example, residential all-electric, ordinary residential, small commercial without electric heating, and so forth). As an interim step, an income tax credit, payable whether or not income tax would otherwise be filed and paid, could be employed as well. The percent of tax revenues that should be refunded would depend on the relationship between income and usage and other factors some of which are under investigation by the D.C. Public Service Commission now.

If recycling some part of the revenues to be collected is not practicable for any reason, then it is possible to soften the regressive impact of the tax by excluding it from the customer charge (the minimum bill amount) and the first two or three hundred kwh per month. Equivalent steps should be taken for the tax on electricity used in master-metered apartments. By removing the tax from the customer charge and low volume usage, the tax rate on higher kwh usage amounts would be increased, thus enhancing its effectiveness.[15]

Finally, whether or not any additional tax is imposed or the taxes are restructured, the D.C. Public Service Commission should make

[15] Such restructuring might mean that the taxes on government sales might be lost because a simple gross receipts may not be feasible. One way around this problem would be to leave the gross receipts tax in place—with a higher tax rate percentage—and then by means of a separate law refund amounts to customers approximately equal to the tax on the customer charge and the first 200 or 300 kwh per month.

sure that D.C. customers do not help pay for new, highly expensive, generating plants that are being built primarily for suburban growth. Calculations above indicate that D.C. customers already pay over $5 million per year because of the inappropriate way in which generating plant investment is allocated, and this subsidy to suburban growth will increase to over $20 million per year by 1981 without any tax increase and to amounts in excess of $40 million per year by 1983 with the recommended tax increases. Regulatory action is clearly required to prevent D.C. customers from bearing a disproportionate share of the costs of these plants, no part of which may be required for D.C. customers.

III. Natural Gas Taxation

Currently in the District of Columbia the price of gas is about 25 cents per therm.[16] In contrast, supplemental supplies of natural gas now cost over 40 cents per therm at the city gate, that is, not delivered to the retail customer. Because the existing low cost supplies of natural gas from the South are dwindling, each additional unit of gas a customer takes must be supplied from the high cost supplemental supplies. The major supplemental supply for WGL is synthetic gas (syngas or SNG) produced by Columbia Liquified National Gas Corporation from petroleum feedstock (naptha) at a plant in Green Springs, Ohio. WGL also expects to purchase liquified natural gas (LNG) imported from Algeria and delivered to Cove Point, Maryland by Columbia. The syngas supplies from Ohio constitute about 3 percent of WGL's total supplies but additions from this source and the LNG from Cove Point are expected to increase these supplemental sources to over 10 percent of the total. Undoubtedly, as existing low cost supplies dwindle, additional high cost supplies will be substituted.

The need for marginal cost pricing is clear. To lift the 25 cents rate to 40 cents would require a tax of about 60 percent. Based on WLG's 1976 D.C. sales of 271 million therms, a gross receipts tax of 60 percent (or 15 cents per therm) would yield about $40 million, above the existing 6 percent gross receipts and 5 percent sales tax revenues.

METHODS OF OFFSETTING THE REGRESSIVE IMPACT OF A NATURAL GAS TAX

Without palliative measures, such a tax increase would create a significant burden on low income customers. A sample of WGL data taken from a listing of usage by type of customer for each meter reading route indicates little difference between per customer usage in low and high income areas except for two important uses, residential gas heating and residential cooling (table 6). Although a minority of residential customers employ natural gas for heating, usage for that purpose exceeds 70 percent of total D.C. residential consumption. There are a number of shortcomings in the data presented in Table 6 but the results for individually metered residential customers sug-

[16] A therm is 100,000 Btu's. For comparison, ten therms or one million Btu is approximately equal to one thousand cubic feet of natural gas. At twenty-five cents per therm, a thousand cubic feet would cost about $2.50.

gest that income affects usage more than the nation wide results reported by Newman and Day.[17] Even so, a tax on natural gas would be a higher percentage of the income of poor families than more affluent families.

Reductions in sales, income, property and other taxes and increases in weatherization, welfare, and energy stamp programs could be used to offset the regressive impacts of a natural gas tax. However, these measures are less acceptable for such purposes than they are for electricity. First, unlike electricity, not all households and businesses use natural gas. Second, there are wide differences in gas consumption depending on whether the customer uses it for heating or not. Third, any tax on natural gas would be more regressive in usage than one on electricity because there is less variation in usage as a function of income.

TABLE 6.—RESIDENTIAL NATURAL GAS USAGE BY CUSTOMER CATEGORY AND INCOME LEVEL, WASHINGTON, D.C., FOR THE YEAR ENDING JUNE 30, 1972

Category	Number of customers	Percent	Consumption in hundreds of cubic feet	Percent	Average cubic feet per customer
Nonheating, noncooling:					
Individually metered:					
Apartments:					
Low income	2,712	23.5	218,776	3.6	81
High income	1,290	9.2	86,412	.7	67
Houses:					
Low income	1,082	9.4	441,527	7.2	408
High income	1,203	8.6	539,928	4.4	449
Group metered apartments:					
Low income	3,140	27.2	431,681	7.0	137
High income	5,870	42.0	602,051	4.9	103
Heating (and other uses except cooling):					
Group metered apartments:					
Low income	925	8.0	714,475	11.6	772
High income	880	6.3	781,708	6.3	888
Individually metered apartments and houses:					
Low income	3,647	31.6	4,297,585	69.8	1,178
High income	4,382	31.3	9,227,219	74.4	2,106
Cooling (and other uses including heating):					
Individually metered apartments and houses:					
Low income	29	.3	52,714	.9	1,818
High income	356	2.5	1,158,704	9.3	3,255
Totals:					
Low income	11,538	100.0	6,156,758	100.0	534
High income	13,981	100.0	12,396,022	100.0	887

Notes: See text for source and interpretation of figures. Low income: Average income for families of $7,500; average income for families and unrelated individuals of $5,700. High income: Average income for families of $32,500; average income for families and unrelated individuals of $19,600. Figures based on unweighted average of U.S. census tract data for 1970. 100 ft^3 of natural gas approximately 1 therm or 100,000 Btu. Percentage figures represent percent of total for designated income group; for example, 2,712 low-income customers are 23.5 pct of total low-income customers of 11,535.

For these reasons fixed or lump sum rebates based on the type of uses and customer category would ultimately be required. Under such an approach a larger rebate would be given to a gas heating customer than a non-heating gas customer, and a house heating customer might be given a larger refund than an (individually metered) apartment heating customer, and so on. The existence of a larger refund for natural gas heating customers than for non-gas heating customers could distort the choice of energy to be used for heating but this

[17] Newman and Day, p. 90.

distortion is fairly small in that few new gas customers are being added at the present time because of the 1972 ban on most new customer hookups.

A tax on natural gas could also be designed to have less financial impact without giving up much of its efficiency incentive. The customer or system charge does not vary with the level of the customer's usage, cannot affect conservation, and, therefore, need not be taxed. The existing 6 percent gross receipts tax and the 5 percent sales tax could both be removed from the customer charge as well. Since the system charge is a significant amount particularly for residential customers ($45 per year for residential non-heating customers and $72 per year for residential heating customers), the burden of the existing or the proposed tax could be substantially reduced by exempting it.

The tax increase would also be held down by exempting small "submarginal" volumes of usage. For example, 80 or 90 percent of all residential heating customers use more than 50 or 100 therms per month in winter so taxes could be removed from this level of usage without much adverse effect. Such changes would reduce the total magnitude of the tax without reducing the marginal rates faced by most customers. Elimination of the tax on the system charge and on submarginal usage would disproportionately reduce the financial burden on low volume users in each category. As table 6 indicates, this would be of particular help to low income households with gas heating, the most important category of usage.

The impact of a substantial increase in the price of natural gas is likely to be quite limited for the majority of commercial customers as natural gas constitutes a small percentage of their costs. Costs for heating office buildings are less than 4 percent of operating expenses and less than 2 percent of total gross income.[18] A few commercial enterprises such as bakeries might experience greater percentage increases but these could be offset to some extent by partial lump sum rebates.

Washington Gas Light's revenues might also be affected by short run sales losses due to the higher tax level. However, as in the case of PEPCO, this is not likely to be significant, especially since the tax increase would be spread over a number of years. To the extent such sales losses occurred, new customers could be added and sales to interruptible customers could be increased to make up the difference. For these and other reasons discussed in the section on electricity, this does not seem to be a very important problem.

BENEFITS ESTIMATES AND MEASURES TO AVOID THEIR LOSS

If the price of natural gas is brought by means of a tax from its current level of twenty-five cents per therm to its marginal or replacement cost of at least forty cents per therm, and if this 60 percent increase in price eventually reduces annual D.C. sales by 30 percent, or about 80 million therms, then the gross savings to D.C. customers would be around $32 million per year (80 million therms × $0.40), or about $210 per customer per year ($32 million/150,000 customers). Taking into account that the customers would on average value these

[18] Apartment and Office Building Association of Metropolitan Washington, Chart 1.

80 million therms at approximately half way between the selling price and the actual cost, the net annual saving would approximately be $6 million per year 80 million therms × (40–25 cents)/2=$6 million), or about $40 per customer year ($6 million/150,000 customers).

Unfortunately, these benefit calculations are complicated by the price "averaging" practices of the pipeline wholesale suppliers of WGL and WGL itself. Currently there is much debate whether the Federal Power Commission should allow the wholesale gas pipeline companies to average in or "roll-in" the costs of supplemental SNG and LNG along with the much lower priced regulated gas from the South. Under rolled-in pricing there are no separate contracts between WGL and its suppliers for supplemental gas. This makes it difficult to identify how much synthetic gas is being used by D.C. customers and to reduce those purchases directly—the rolled-in wholesale price to WGL remains much the same whether or not WGL customers reduce their usage. Even if WGL customers did not require any SNG or LNG, they would still be charged for it under rolled-in pricing.

Although it is difficult to imagine a stronger anti-conservation measure, (the equivalent of master metering at the wholesale level), it is possible for the D.C. Public Service Commission to ascribe the additional costs created by SNG and LNG among the three jurisdictions served by WGL and not allow WGL to charge D.C. customers for any amounts of SNG and LNG which they would not need if such supplemental supplies were contracted for separately. Inasmuch as the low cost conventional supplies are dwindling through time, some supplemental supplies will be needed and to that extent the D.C. Commission can make sure that D.C. customers do not subsidize suburban growth.

Some suburban subsidization may already have occurred: in 1976, 37 million therms of SNG were obtained by WGL under a separate contract at a price of 41.9 cents per therm, a total of $15 million worth. Although the data do not clearly indicate for whom this SNG was contracted for in the early 1970s, it is very likely that it was primarily intended for suburban customers where the major growth in consumption had occurred prior to the 1972 ban on new customer hookups. As in the case of electricity, it is necessary to insure that the benefits of any natural gas savings created by D.C. customers do not flow to suburban customers.

Another technique to offset rolled-in pricing is to use any gas conserved to supply additional D.C. customers who might otherwise opt for electric heating, the equivalent costs of which easily exceed 50 cents per therm. If it were possible, the District of Columbia might also consider selling any "extra" gas to suburban customers at 40 cents a therm, rather than letting it simply flow to suburban customers. The District should pursue the matter of rolled-in pricing with the Federal Power Commission, in the courts if necessary. It should be noted that the various measures to protect D.C. customers are needed whether or not an additional tax is imposed on natural gas.

RECOMMENDATIONS

As in the case of electricity, the 5 percent general sales tax on natural gas should be replaced with a 5 percent gross receipts tax that would

bring the total gross receipts tax up to 11 percent. The next step would be to increase the gross receipts tax by a series of increments to about 60 percent so the price including the tax would be near forty cents per therm. As this would be a quite regressive tax increase, part of the proceeds of the tax should be refunded to customers. For an initial small increase of the gross receipts tax (from 11 percent to a 15 or 20 percent rate), this could be accomplished by means of a D.C. income tax credit or a direct refund. For larger increases in the gross receipts tax rate, direct fixed refunds or rebates should be used in order to provide relief to those hardest hit by the tax. The amount of rebate should be determined as a function of the type of usage involved (gas heating, gas cooling, etc.)

Much the same result could be achieved by removing the tax from the system charge and a small submarginal amount of gas consumption in each customer category. To retain the gross receipts tax form it would be necessary to provide separate reimbursement of these taxes so direct refunds would be needed in any event. Unlike electricity sales, however, less than 10 percent of natural gas sales revenues are exempt. Therefore, it would be possible to drop the gross receipts tax and design the tax as suggested for over 90 percent of the total gas sales. This is important if the tax is not increased at all or not enough to raise all rates to marginal cost levels. Transfer of the tax from the customer charge and a minimal amount of therm usage to the higher, marginal levels of usage would raise the effective price faced by most customers, closer to the marginal cost level and would also reduce or eliminate the requirements of the tax.

If the tax on natural gas is raised significantly, then it may be necessary to examine more carefully the impact on certain types of commercial customers with heavy natural gas usage such as bakeries. A special survey may be needed to assess the impact on these customers although the cost of natural gas forms a minor part of the costs of most commercial customers.

Finally, the D.C. PSC should use its regulatory control of WGL to avoid having D.C. customers subsidize suburban customers—whether or not any changes in taxes are implemented.

IV. Summary

Because of current regulatory practices, retail rates for electricity and natural gas are based on historical embedded average costs rather than marginal or replacement costs. The result is that existing rates are well below marginal costs with attendant over-use and inefficiency.[19] An analysis of marginal costs indicates that gas and electric rates should be raised about 40 to 60 percent. Such a tax would yield roughly $100 to $150 million in total with $30 to $40 million from natural gas and the remainder from electricity.

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[19] There has been much attention over the fact that the cost of electricity varies widely by time of day. The cost of electricity can easily range from one cent or less to ten cents or more per kwh. However, on average the marginal cost does exceed five cents per kwh for PEPCO, and it is this discrepancy between the average level of marginal or replacement based costs and the existing average level of prices (based on historical costs) that is being focused on, rather than the time of day variation in costs. The D.C. Public Service Commission is actively engaged in an examination of time of day pricing.

In fact, a single percentage tax increase would not bring the rates perfectly into line with marginal costs because some of the existing rates are closer to marginal costs than others. Ultimately, a tax designed to bring rates all the way up to marginal costs would have to be tailored fairly carefully. However, to impose a tax of even 40 percent all at once would probably be too drastic an increase so there is no necessity to obtain precise measurements of marginal costs before imposing the first stage of the tax. Better estimates would not be required until the post-tax rate is increased enough to approach marginal cost levels.

Although the tax rate should not be set so the rates are raised to marginal cost levels instantly, it is possible to maximize the economic and conservation benefits by designing the tax correctly. The tax on kwh and therm rates could be increased if the tax on the customer charge or system charge were dropped. The customer charge is a lump sum payment by each customer (e.g., $2 per residential electricity customer per month) and does not vary with the level of the customer's consumption. As this charge remains the same no matter how much gas or electricity is used by the customer, there is no reason to tax it.

The tax could be made even more effective by concentrating on the higher levels of usage, i.e., by raising the marginal rates faced by the overwhelming majority of consumers. For instance, most residential electricity customers use over 200 or 300 kwh per month, so it is really the kwh rate above this level that matters. Not only do a small percentage of customers use less than 200 or 300 kwh per month but the total percentage of kwh sales purchased by these customers is even smaller because of their less than average usage.

As the kilowatt demand charge imposed on medium and large commercial electricity customers is nothing but an extremely high (e.g., $10) kwh rate imposed only at the time of the customer's maximum 30 minute demand level each month, there is no economic rationale for such a charge, nor for any tax on it.

By these tax design measures it is possible to increase the effectiveness of these taxes while holding the total tax revenue to any given level, including the present level.

Such tax redesign is somewhat complicated by the fact that any direct tax on the customers, such as the 5 percent sales tax on gas and electricity, is not paid by government and certain other exempt classes. The existing 6 percent gross receipts tax is paid by government customers because this tax is nominally levied on the utility itself but is passed on in higher rates to all customers including those who are sales tax exempt. It may be possible to impose a tax on PEPCO and WGL based on their kwh and therms sold to all customers to avoid taxing customer and demand charges without allowing exempt customers to escape the tax. This could also be accomplished by raising the tax rate and then providing separate refunds to customers equal to the tax revenue on customer and demand charges and on low volume of gas and electricity usage.

Taxes on electricity and natural gas would by themselves, tend to be regressive. However, there are a number of ways of offsetting these

regressive impacts. Part of the proceeds of the tax could be used to reduce the general sales tax, the D.C. income tax, or other taxes, or to fund insulation and weatherization programs, energy stamps, low income utility bill payments, and general welfare programs. An income tax credit, payable in cash to the extent it exceeds the tax due, could be a reasonable short run solution. However, the greatest drawback to most of these approaches is that the refund may not be very well tailored to the customer's burden. For instance, an all-electric residential customer would probably pay much more tax than a household using oil for heating but an income tax credit would not distinguish these two cases.

Direct customer refunds based on customer class type of usage, and type of dwelling (e.g., residential, gas water and space heating, apartment unit) would be the best solution. These refunds should be fixed, that is, should not vary with the customer's level of usage. Such lump sum refunds would also greatly reduce if not eliminate the regressiveness of the tax because low income customers are generally low volume users and the low volume user would receive a much larger percentage of his or her utility tax back through a lump sum refund. A refund of $5 is a much greater percentage refund to a small volume customer paying $7 in utility taxes than a large volume customer paying $14.

Elimination of the tax on the customer charge and on low volumes of usage to produce a more effective tax, as discussed above, would also reduce the regressiveness of the tax because the tax on the customer charge and low volumes of usage are large part of the tax paid by a low volume customer. Elimination of the tax on the customer charge and on the first 200 kwh would reduce the tax of a customer using 400 kwh per month by a much larger percentage than it would for one using 800 kwh. Both efficiency and income equity support such a redesign of the tax.

The impact on residential consumers living in master-metered apartment buildings is less certain. Data suggest that low income apartment units use about the same amount of gas as higher income apartment households. Even less is known about the variation in electricity usage in master-metered apartments. Generally, energy usage is less for apartment units than for single family homes. Direct rebates to these customers would probably be the best way of offsetting a good part of the tax increase.

The costs of natural gas and electricity equal less than 15 percent of the gross revenues for commercial buildings, which are the predominant type of commercial customers PEPCO and WGL serve in D.C. A 50 percent utility tax might reduce the rate of commercial activity but, aside from whether this would be undesirable, a limited initial tax increase would have little effect and would allow time to investigate the impacts, especially those such as bakeries using large quantities of natural gas. Income tax credits and direct rebates could also be employed to return some of the tax collected and reduce the impact.

BENEFITS OF UTILITY TAXES

To bring the price of natural gas from its existing level of 25 cents per therm to its marginal cost of at least 40 cents would require a 60 percent tax. If this 60 percent increase in price reduces D.C. sales

by 30 percent in the long run or about 80 million therms per year, the annual gross savings to D.C. customers would be around $32 million (80 million therms × the marginal cost of 40 cents). Assuming customers on average would value these 80 million therms at approximately half the difference between the selling price of 25 cents and the marginal cost of 40 cents, i.e., at 32.5 cents per therm, the net annual saving would be $6 million (80 million therms × the difference between the marginal cost of 40 cents and the average value of 32.5 cents per therm), or about $40 per customer per year ($6 million/150,000 customers).

Based on an average existing rate of 3.5 cents per kwh, a post-tax price of 5.0 cents might in the long run reduce D.C. electricity sales 30 percent or 1.8 billion kwh per year below what they would otherwise be. On this assumption the gross annual saving would equal $90 million (1.8 billion kwh × the marginal cost of 5 cents). The net saving which is based on the average difference between the selling price and the marginal cost would be $13 million per year (1.8 billion kwh × (5.0−3.5 cents)/2=$13 million). This is $70 per customer ($13 million/190,000 customers).

Not only are these long run estimates quite conservative in a number of respects but also the benefits would be expected to grow through time. Of course, by implementing these taxes in a series of steps over a period of time the full benefits would take longer to develop. Informing customers of the eventual tax level goal would help to reduce this lag as consumers would plan on the basis of rates at marginal cost levels.

One argument advanced against these benefits is that they ignore short run problems. It is claimed that any short run losses in sales by the utilities from the effect of higher taxes will not be matched by equivalent short run reductions in costs because of the existence of fixed costs. However, the short run sales reduction would be small, particularly as the tax increase would be spread over a period of time. Second, a one percent drop in costs accompanying a two percent drop in sales does not mean everyone is worse off; in fact, customer bills are reduced one percent. Finally, if the resulting increase in the average rate created in this example is unacceptable, then the tax rate could be reduced to compensate. These short run effects are quite minor in view of the large long run benefits.

It has also been claimed that higher rates might reduce kwh sales more than the peak demand which sets the "requirement" for generation, transmission and distribution capacity. The rationale for this needle peak hypothesis is that customers facing higher rates will cut back on air conditioning usage on moderately hot days but very little on the hottest days. It is unclear why consumers should, for example, attempt to lower room temperature to 78° F on moderately hot days but to 74° F on the hottest days as this hypothesis suggests, but in any event the actual record for PEPCO does not support this possibility despite very rapid increases in the kwh rate since 1973.

A more significant problem is that under current practices a major share of these benefits created by the conservation efforts of D.C. customers would be transferred to suburban customers in Maryland and Virginia served by PEPCO and WGL. By effectively basing rates on

the average cost of electricity and natural gas for all three jurisdictions as a whole, rather than for each jurisdiction separately, the benefits of slower growth in the District of Columbia would reduce the rates for all customers not just those in the District of Columbia. This occurs because the very high costs of new supplies and plants are allocated among all jurisdictions even if none of these supplies or plants are required by D.C. customers. Essentially this cost averaging means that suburban growth is subsidized by D.C. conservation as the cost for suburban customers is reduced. In fact, this suburban subsidization is already taking place without any additional gas or electricity tax because the growth rate for D.C. sales of these energy sources, particularly electricity, is less than that in the suburbs. It is estimated that as a result D.C. customers already pay in excess of $5 million per year extra. Therefore, whether or not gas and electricity tax changes are implemented, it is important that the D.C. Public Service Commission, or if necessary, the D.C. City Council, act to prevent such suburban subsidization (which is mainly from the poor to the rich it should be noted).[20]

The real impact of this average cost allocation method is yet to be felt as the expensive new replacement gas, SNG, and LNG, and electricity generating plants (Chalk Point Unit 4, Dickerson Unit 4, and Douglas Point No. 1) are just beginning to be introduced or built. It is estimated that the overpayment by D.C. electric customers—without any increase in the tax—could amount to $20 million per year by 1981 unless this situation is remedied. With the added tax on electricity, although the cost for D.C. would still be reduced by the tax, the overpayment could exceed $40 million per year!

Although there is a very simple remedy for this over allocation of plant investment costs to D.C. electric customers—the Public Service Commission merely needs to exclude them from the rate base with the stroke of a pen—protecting D.C. customers against their having to help pay for the expensive replacement gas, to be used primarily for suburban growth, might prove much more difficult if the wholesale pipeline suppliers to Washington Gas Light Company are allowed by the Federal Power Commission to average in ("roll-in") the costs of the synthetic (SNG) and liquified natural gas (LNG). The D.C. PSC has no authority to reduce the rates charged to WGL by its wholesale suppliers so the wholesale price would stay much the same whether D.C. customers reduce their consumption. Nevertheless, it is possible for the D.C. PSC to determine the costs and quantities of these supplemental gas supplies at the wholesale pipeline level and for each jurisdiction served by WGL, and to allocate the costs among the jurisdictions according to their need for supplemental gas. In addition, the District should also oppose rolled-in

[20] There are several related techniques currently employed by the utilities to allocate costs among the three jurisdictions that increase D.C. rates. It is assumed that in allocating accumulated plant depreciation and plant depreciation expense, the average age of plant investment is the same in every jurisdiction. Clearly, it is older in District of Columbia. This matter is under investigation by the D.C. Public Service Commission for gas operations, and, presumably, will be investigated for electricity operations in the near future. But there are other areas which also should be analyzed: for instance, it is assumed that the average temperature on the 5°F peak "design" day for natural gas cost investment allocations is the same in all three jurisdictions, but in fact it would be warmer in the city. A detailed examination of these jurisdictional allocation methods is badly needed.

pricing at the Federal Power Commission, in court, or wherever necessary. Action is required whether or not the tax on natural is increased. In addition, increased gas sales to interruptible customers and new permanent customers in the District of Columbia should be used to offset part or all of savings by existing D.C. customers rather than let this gas flow to the suburbs because the alternative, such as electric heating, for many District customers who cannot get natural gas is much more expensive.

RECOMMENDATIONS

At present, a 6 percent gross receipts tax and a 5 percent sales tax are levied on gas and electricity sold in the District of Columbia. The gross receipts tax applies to all sales, including those to government; however, the sales tax is not paid by government, non-profit and other exempt customers. As there is no point in taxing some, notably residential customers, at an 11 percent rate and others at a 6 percent rate, the general sales tax on electricity and gas purchases should be eliminated, and either of two things done to make up the difference: increase the gross receipts tax rate to 11 percent or raise the gross receipts tax enough (from 6 percent to about a 9 percent rate) to hold the total tax revenues produced from the current sales and gross receipts taxes to the same level. The first alternative does not ease the burden on residential customers but at least makes it equal for all types of customers, and would raise about $6 million extra tax revenue. The second alternative raises no extra revenue but reduces the burden on residential customers with a more equitable sharing of the tax. The only disadvantage of replacing the sales tax with an increase in the gross receipts tax is the minor one that those (mostly high income) residential customers who itemize deductions in calculating their Federal income tax would lose part of the sales tax deduction.

Under either option or the existing arrangement, it is possible to increase the effectiveness of the tax and at the same time to decrease its regressiveness by redesigning it. This redesign would involve elimination of the tax on the customer charge (system charge or minimum bill charge), on the kilowatt demand charges for electricity, and on low, submarginal volumes of monthly kwh and therm usage. An offsetting increase in the taxes on the higher levels of kwh and therm usage could then be imposed. Because the gross receipts tax, which may be the only tax form that can be used to tax government sales, would have to be dropped to directly redesign the tax as suggested, it might be necessary to raise the gross receipts tax rate and then to implement separate rebate legislation to give back the tax on the customer charges, demand charges, and low volumes of electricity and gas usage.

The next step would be an increase in the gross receipts tax rate as the first increment toward eventually bringing electricity and gas prices closer to their respective marginal costs which are generally at least 50 percent above the current prices. As raising the gross receipts tax rate from 6 or 11 percent to 50 percent or more would be too great an increase in customers' bills, the tax should be increased in a series of steps.

A reasonable initial tax rate might be around 15 or 20 percent. An increase in the rate from 11 percent to 15 percent would increase tax revenues by $13 million; an increase from 11 to 20 percent would yield about $30 million more. It is at this point that measures to reduce the regressive impact on residential customers would become more important.

There are several options to accomplish this. The first is to not increase the gross receipts tax rate on residential customers but merely increase the rate on (non-government) commercial sales by means of a separate tax. This has the disadvantage of leaving the energy prices for residential and government customers at the existing levels, but that may be acceptable. A second alternative is to raise the gross receipts tax rate to the 15 to 20 percent level and offset the regressive impacts by refunding some fraction of the revenues by means of a D.C. income tax credit (payable in cash if it exceeds the income tax due) for residential and commercial customers. Although the relief provided by this tax credit would not necessarily be very well targeted to those suffering the greatest increase in the tax, the general increase in the gross receipts tax might not be so great as to require more specific assistance. Finally, the gross receipts tax rate could be raised to a much higher level such as 25 percent and specific refunds for the taxes collected on the customer charges, demand charges, and on low volumes of usage could be provided in separate legislation: the amount of tax collected less the specific refunds could be set approximately equal to that in the second alternative (a 15 or 10 percent gross receipts tax less the income tax credit). This third option is probably the best solution as it would significantly increase the effective price of electricity and gas, and would provide the largest refunds to those who would need them most.

Before raising the taxes beyond this initial 15 or 20 percent level, additional studies of marginal costs and of the possible impacts on residential, group metered residential and commercial customers should be instituted to uncover any possible problems such as low income residential or commercial customers who use large amounts of gas or electricity. After this period of adjustment and analysis, the tax rate should be increased by further steps until the tax rate brings the price of gas and electricity near the marginal cost level. Assuming a tax rate of at least 50 percent it would be absolutely mandatory that part of the tax revenues be recycled by direct refunds in addition to other means already indicated (income tax credits, elimination of taxes from customer charges, demand charges, and from low volumes of usage). A 50 percent gross receipts tax would yield on the order of $150 million per year. If even as much as two-thirds of this amount were refunded directly or by other mechanisms, the additional revenue would be equal to $50 million per year, an amount which exceeds the existing utility gross receipts tax collections of about $35 million.

It is also worth pointing out that, unlike many other taxes, a tax on natural gas and electricity would improve matters—their prices are below marginal costs. In contrast, most other taxes raise prices above their marginal costs and reduce economic efficiency. It is true that energy taxes are regressive but by the means outlined they can be made very progressive. Not often is there an opportunity to obtain additional tax revenue and at the same time improve economic efficiency. Taxation

of natural gas and electricity should be given high priority and certainly should be implemented before less efficient taxes are considered.

The final recommendation is that the D.C. Public Service Commission not allow D.C. customers to pay for suburban growth by paying a disproportionate amount of the costs of new gas supplies and new generating plants. As indicated, this step should be taken whether or not the taxes on natural gas and electricity are increased since it appears that D.C. customers are already paying in excess of $5 million extra per year from over-allocation of costs to them. Action should be initiated now because without reconsideration of this cost over-allocation, the annual penalty to D.C. customers will mount to a much greater annual magnitude within a few years.

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EXCISE TAXES IN THE DISTRICT OF COLUMBIA

(By Paul B. Manchester, Assistant Professor, Department of Economics, The Catholic University of America)

I. Summary and Conclusions

This study is an analysis of excise taxes in the District of Columbia. Specifically, we review the following:

A. Transient accommodations tax.
B. Alcoholic beverage taxes.
C. Cigarette tax.
D. Motor vehicle taxes:
    1. Excise tax imposed at the time of issuance of title.
    2. Annual registration fees.
E. Gasoline tax.

Overall, excise taxes do not appear to be a promising area for future revenue growth in the District. The Department of Finance and Revenue estimates that total revenue from sources B., C., D., and E. will decline from $79,525,000 in fiscal 1977 to $72,064,000 in fiscal 1983.[1] One half of this projected decrease is attributable to the scheduled reduction in automobile registration fees as of October 1, 1977; the other half arises from anticipated continuing decreases in revenues from alcoholic beverage and cigarette taxes. In relation to total revenue from all District sources, receipts from these four taxes are projected to fall from 9.6 percent in fiscal 1977 to 6.3 percent in fiscal 1983. These projections may be conservative, changes in tax rates may alter the outlook, and the trends differ for the various excises, but the general conclusion appears to be valid: Excise taxes probably will account for a decreasing portion of revenue received by the District.

Reasons underlying this conclusion include the following:

1. A low income elasticity of demand for some of these items, especially cigarettes; as income rises, expenditures do not rise proportionately.

2. Interlocality sales, the "border-city problem." With respect to alcoholic beverages, cigarettes, and possibly gasoline, consumers appear to be highly aware of and responsive to differences in price between the District and the suburbs. This is especially true of commuters to and from the District, who may readily purchase in or outside the city, and for those living close to the District line, for whom transportation costs into or out of the District may be small in relation to possible tax savings.[2] Recent trends show a relative

[1] Department of Finance and Revenue, Office of Fiscal Planning and Research, "Long-Term Revenue Estimates, Fiscal Years 1977–1983," April 6, 1977. Separate projections have not been made for the transient accommodations tax.

[2] Kenneth Greene, William Neenan, and Claudia Scott, in "Fiscal Interactions in a Metropolitan Area," 1974, p. 230, citing Census date, estimated that, of the D.C. labor force in 1970, 48 percent were District residents, 32 percent were suburban Maryland residents, 19 percent were suburban Virginia residents, and 1 percent were from outside the metropolitan area.

decline in the volume of purchases in the District, especially of alcoholic beverages and cigarettes.

3. Growth in the number of outlets in the suburbs, especially for alcoholic beverages.

4. The energy crisis and the various proposals for dealing with it. These may adversely affect motor vehicle and gasoline tax revenues.

5. The development of Metro, which may have a number of beneficial effects on the economy of the District, but which probably will also lead to lower revenues from motor vehicle and gasoline taxes and may aggravate the interlocality sales problem.

The major exception to this unfavorable outlook for excises is the transient accommodations tax. The income elasticity of demand for accommodations is high, the "border-city problem" is less important, and the 8 percent tax rate in the District is less than the current combined state and local rates in the Maryland suburbs. Construction of a Convention Center in the District would further improve the outlook for revenues from the transient accommodations tax.

Because of the problem of interlocality sales, it is possible that in some cases (the cigarette tax, for example), lower tax rates might lead to an increase in sales sufficiently large to produce an actual increase in tax revenues. Whether this is in fact the case, however, would require a detailed econometric analysis of the price elasticity of demand. We urge that such an analysis be made. In addition, sales of goods subject to excise taxes usually lead to revenues from sales taxes and income taxes: impacts of changes in excise tax rates on those other revenues should also be taken into account. And the District might not want to be a source of goods bearing low excise taxes. In the case of cigarettes, for example, while much of the interstate smuggling may consist of relatively small purchases by individuals, there is ample evidence of large-scale involvement of organized crime.

In Section II we summarize the significant features of each of these excises as of March 1, 1977. We also review the recent history of the tax rates and present data on revenue collected for fiscal years 1970-76. For the largest suburban locations we summarize the significant features of these excises as of March 1, 1977.

One criticism of excise taxes which is often raised is that they may be regressive, taking a higher proportion of income from low-income families than from high-income families. Using data from the 1972–73 Consumer Expenditure Survey, we analyze this question in detail in Section III. Our conclusion is that the transient accommodations tax is progressive, the cigarette tax is regressive. Alcoholic beverage taxes, motor vehicle taxes, and the gasoline tax may be considered regressive or progressive, depending on the choice of basis for comparison between various income groups. If these results from cross-section analysis apply to time-series data, the transient accommodations tax is the most growth-responsive, the cigarette tax the least growth-responsive.

In Section IV we discuss in more detail a model of the markets for goods subject to excise taxes in the District. A general relation for determining the revenue productivity of changes in excise tax rates is then developed. If estimates of the relevant elasticities become available, this relation could be used to determine the rate which

maximizes tax revenues. For each tax we present a brief discussion of the rationale, review relevant studies of the elasticity of demand, and discuss the problem of interlocality sales. A review of the forecasts of excise tax revenues for fiscal years 1977 through 1983 is then presented. Details of the derivation of the revenue-productivity formulae are presented in the Appendix.

II. Excise Taxes in the District of Columbia and Certain Surrounding Localities

The Washington, D.C., Standard Metropolitan Statistical Area, as defined by the Census Bureau, includes the District of Columbia; Montgomery, Prince George's, and Charles counties in Maryland and Arlington, Fairfax, Loudoun, and Prince William counties and the cities of Alexandria, Fairfax, and Falls Church in Virginia. In this section we present basic data on the excise taxes being studied for the District and the largest suburban locations within close proximity to the District. Specifically, we include Montgomery and Prince George's counties in Maryland and Arlington County, Fairfax County, and Alexandria in Virginia.

For each of these excise taxes in the District we summarize the key features as of March 1, 1977; review the recent history of the tax rates; and present data in table 1 on revenue collected for fiscal years 1970 through 1976. For the suburban locations we summarize the key features of these excise taxes as of March 1, 1977.

A. TRANSIENT ACCOMMODATIONS TAX

The transient accommodations tax (or hotel/motel tax) is part of the sales tax, but it is assessed at the rate of 8 percent of gross receipts, rather than the general level of 5 percent of gross receipts.

TABLE 1.—SELECTED EXCISE TAX REVENUES IN THE DISTRICT OF COLUMBIA, FISCAL YEARS 1970–76

[In thousands of dollars]

	Transient accommodations tax	Alcoholic beverage tax	Cigarette tax	Motor vehicle		Gasoline tax	Total
				Titling tax	Registration fees		
Fiscal year:							
1970	5,544	[1] 13,456	[1] 5,462	[1] 5,866	[1] 10,717	16,718	[1] 57,763
1971	5,238	13,383	6,016	6,688	10,979	16,761	59,065
1972	5,627	13,379	6,143	7,831	11,360	[1] 17,691	[1] 6,031
1973	[1] 6,799	13,000	[1] 7,755	[1] 9,344	11,599	20,298	[1] 68,795
1974	7,832	12,073	7,861	9,078	11,778	19,459	68,081
1975	8,267	11,653	7,334	8,905	11,637	19,319	[1] 67,115
1976	9,306	[2] 11,509	[1] 9,842	[1] 11,507	[1] 14,826	[1] 21,545	[1] 78,535
Average annual percentage growth rate	9.0	−2.6	10.3	11.9	5.6	4.3	5.3

[1] Increase in rate effective during fiscal year.
[2] Of the total revenue, 83 prcent was obtained from taxes on spirits, 11 percent from taxes on beer, and 6 percent from taxes on wine.

Source: District of Columbia Department of Finance and Revenue.

The recent levels of the transient accommodations and general sales tax rates are:

	Transient accommodations tax rate (percent)	General sales tax rate (percent)
Effective date:		
Aug. 1, 1949	2	2
Aug. 1, 1954	3	2
Apr. 1, 1962	4	3
Nov. 1, 1966	5	3
Sept. 1, 1968	5	4
Oct. 1, 1972	6	5
July 1, 1976	8	5

In Montgomery and Prince George's counties, transient accommodations are subject to the general state sales tax of 4 percent (5 percent as of June 1, 1977) plus additional county taxes of 5 percent, yielding effective total rates of 9 percent (10 percent as of June 1, 1977).

In Virginia, transient accommodations are subject to the combined 4 percent general state and local sales tax (3 percent state, 1 percent local). In addition, Alexandria levies a 4 percent tax (yielding a total of 8 percent), and Arlington and Fairfax counties levy taxes of 2 percent (total of 6 percent).

To summarize, the 8 percent transient accommodations tax in the District is lower than the combined rate of 9 percent in Montgomery and Prince George's counties (10 percent as of June 1, 1977), equal to the combined rate in Alexandria, and greater than the combined rate of 6 percent in Arlington and Fairfax counties.

B. ALCOHOLIC BEVERAGE TAXES

As of March 1, 1977, alcoholic beverage tax rates in the District are:

Beer: $2.25 per 31-gallon barrel.

Wine: 15 cents per gallon containing less than 14 percent alcohol; 33 cents per gallon containing more than 14 percent alcohol; 45 cents per gallon for carbonated wine and champagne.

Distilled spirits: $2.00 per gallon.[3]

In addition, sales of liquor, beer, and wine for consumption off the premises are subject to a sale tax of 6 percent, exceeding the general sales taxe rate by 1 percent since October 31, 1969. Sales of alcoholic beverages for consumption on the premises are subject to an 8 percent sales tax.

Distilled spirits and wine have been taxed since 1934, beer since 1938. Increases in the excise taxes on distilled spirits and beer in recent years include:

	Distilled spirits (per gallon)	Beer (per barrel)
Effective date:		
Before Apr. 1, 1962	$1.25	$1.50
Apr. 1, 1962	1.50	1.50
Nov. 1, 1966	1.75	2.00
Dec. 1, 1969	2.00	2.25

[3] The federal tax on distilled spirits is $10.50 per *proof* gallons; for example, the tax is $1.31 for a quart of 100 proof spirits, $1.05 for a quart of 80 proof spirits, etc. The taxes in D.C., Maryland, and Virginia (and most states) are not graduated by alcohol content.

The taxes on wine have been unchanged since 1956.

Tax rates on alcoholic beverages in Maryland are:

Beer: $2.79 cents per 31-gallon barrel.

Wine: 40 cents per gallon.

Distilled spirits: $1.50 per gallon.

In addition, the general sales tax of 4 percent (5 percent as of June 1, 1977) applies to alcoholic beverages.

Excise tax rates on beer and wine in Virginia are:

Beer: $7.80 per barrel; and 2.0 cents per bottle containing 7 ounces or less, 2.6 cents per bottle containing more than 7 ounces but not more than 12 ounces, 2.2 mills per ounce for bottles containing more than 12 ounces.

Wine: 15 percent of retail price, plus: 35 cents per gallon containing less than 14 percent alcohol; 70 cents per gallon containing more than 14 percent alcohol.

Virginia is a control state; distilled spirits are sold only through state-operated stores. Thus the distinction between taxes and pricing policies is somewhat arbitrary. This is also true for the county-operated stores in Montgomery County. The tax on sales of distilled spirits at Virginia stores is 15 percent. The combined 4 percent sales tax applies to beer and wine (sold in grocery and drug stores), but not to sales in Virginia liquor stores.

To summarize, excise taxes on beer and wine are slightly lower in the District than in Maryland and much lower than in Virginia. Distilled spirits are taxed more heavily in the District than in Prince George's County; comparisons with Virginia and with Montgomery County are difficult to make because liquor stores are operated by the government in these localities.[4]

C. CIGARETTE TAX

The cigarette tax is 13 cents per pack in the District. The general sales tax has also been applied to cigarettes since November 1, 1966. The cigarette tax rate in the District in recent years has been:

Effective date:	*Tax (cents per pack)*
1949	1
July 1, 1954	2
November 1, 1966	3
December 1, 1969	4
December 1, 1972	6
December 1, 1975	10
July 1, 1976	13

Cigarette tax revenues (net of discount for affixing stamps or meter impressions) for fiscal years 1970–76 are given in table 1.

In Maryland the cigarette tax is 10 cents per pack. The sales tax also applies, but, in contrast to the situation in the District and Virginia, the sales tax base excludes the cigarette excise tax.

The Virginia cigarette tax is 2.5 cents per pack. In addition, Alexandria levies a tax of 10 cents per pack, and Arlington and Fairfax counties levy taxes of 5 cents per pack.

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[4] Greene, Neenan, and Scott, p. 223, estimated that in comparison with the District, in 1972, liquor prices were 10 percent higher in Virginia, 8 percent higher in Montgomery County, and 7 percent higher in Prince George County.

To summarize, the District cigarette tax rate of 13 cents per pack exceeds the 10-cent rate in Maryland, the combined rate of 12.5 cents in Alexandria, and the combined rate of 7.5 cents in Arlington and Fairfax counties.

D. MOTOR VEHICLE TAXES

Motor vehicles taxes include two types of levies:

1. Sales, use, or titling taxes, assessed at the time of sale or issuance of title.
2. Annual registration fees.

The titling tax in the District is based on vehicle weight. Rates as of March 1, 1977, are:

Vehicle weight (pounds):	*Percentage of market value*[5]
2,800 or less	4
2,801 to 3,499	5
3,500 to 3,999	6
4,000 or more	7

Before October 1, 1976, the titling tax was not graduated by vehicle weight. In recent fiscal years (FY) the rates, expressed as percentages of market value, have been:

Effective date:	*Rate (percent)*
Fiscal year 1949	2
Fiscal year 1967	3
Fiscal year 1970	4
December 1, 1972	5
November 1, 1975	6
October 1, 1976	4–7

All of these receipts are paid into the General Fund.

In Maryland the titling tax is 4 percent of the market value (5 percent as of June 1, 1977). Virginia imposes a sales and use tax of 2 percent of market value; this is payable upon application for the certificate of title; thus in effect it does not differ from a titling tax.

To summarize, the motor vehicle titling tax is higher in the District than in Maryland or Virginia. But because the tax is based on owner's residence rather than the location of sale, interlocality sales effects my be minor.[6]

Annual automobile registration fees are also graduated by weight in the District. Rates as of March 1, 1977, are:

Weight (pounds):	*Fee (dollars)*
2,800 or less	50
2,801 to 3,499	57
3,500 to 3,999	83
4,000 or more	96

Receipts from automobile registration fees for fiscal years 1970 through 1976 are given in table 1; of the total, 54 percent is paid into the Highway Fund, 46 percent into the General Fund.

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[5] Market value as determined by the National Automobile Dealers Association (NADA) "Blue Book."

[6] The tax may, however, affect rental car companies' decisions about location.

In recent years automobile registration fees in the District have been as follows:

RATE ON AUTOMOBILE OF INDICATED WEIGHT (POUNDS)

	2,800 or less	2,801 to 3,400	3,401 to 3,499	3,500 to 3,999	4,000 or more
Effective date:					
Before fiscal year 1970	$22.50	$22.50	$22.50	$32.50	$32.50
Fiscal year 1970	30.00	30.00	50.00	50.00	50.00
Nov. 1, 1975	40.00	40.00	67.00	67.00	67.00
Oct. 1, 1976	50.00	57.00	57.00	83.00	96.00
Oct. 1, 1977	35.00	42.00	42.00	68.00	76.00

In Maryland the annual registration fee is $20 for an automobile weighing 3,700 pounds or less, $30 for one weighing more than 3,700 pounds. In Virginia the state fee is $15 for an automobile weighing 4,000 pounds or less; $20 for one weighing more than 4,000 pounds. In addition, Alexandria, Arlington County, and Fairfax County all impose taxes of $20 on automobiles weighing 4,000 pounds or less (for a total of $35), and $25 on automobiles weighing more than 4,000 pounds (for a total of $45). The personal property tax applies to automobiles in Virginia, but not to those in the District or Maryland.[7]

To summarize, registration fees in the District for automobiles of any weight exceed the corresponding fees in Maryland and Virginia; this is somewhat offset by application of the personal property tax to motor vehicles in Virginia.

For both the motor vehicle titling tax and the annual registration fees there are costs of establishing and maintaining records. Thus only the excess of tax payments over these amounts truly represents taxes in the economic sense.[8]

E. GASOLINE TAX

The gasoline tax in the District is 10 cents per gallon. The rate in recent years has been:

Effective date:	*Tax per gallon (cents)*
Before fiscal year 1967	6
November 1, 1966	7
February 1, 1972	8
November 1, 1975	10

Collections for fiscal years 1970–76 are shown in table 1. All of these receipts are paid into the Highway Fund.

The gasoline tax rate in the District exceeds the rate of 9 cents per gallon levied in both Maryland and Virginia.

Unlike most excise taxes, gasoline taxes are deductible from the federal (and District) income tax. Thus, for taxpayers who itemize deductions, the effective rates are somewhat less than the statutory rates. (However, Congress may eliminate the deductibility of the gasoline tax from the federal income tax.)

[7] The motor vehicle registration fee was set at $22.00 as the equivalent of the personal property tax on automobiles when the tax was repealed in 1954. The rate was increased to $22.50 in 1957. See L. L. Ecker-Racz, "Financing the District of Columbia" (1968), p. 47.

[8] For all taxes there are costs of compliance to the taxpayers and costs of collection to the District government. Thus the figures in table 1 understate the economic burden on taxpayers and overstate the net revenue to the District government. Data are not available for other taxes, but presumably this gap is much greater for motor vehicle titling taxes and registration fees than for the other taxes studied herein.

III. Expenditures, by Income Level, on Items Subject to Excise Taxes in the District of Columbia

A primary concern of tax policymakers is the vertical equity of the tax system. Stated simply, this basic principle provides that total tax payments should increase with the ability to pay taxes. There appears to be little disagreement on this general goal. Translation of the principle into practice, however, raises many questions and controversies. Among the major issues are:

1. Who actually "pays" various taxes? This is the question of tax incidence. The statutory incidence of a tax may differ from the economic incidence. For example, by statute cigarette taxes in the District are paid by wholesalers through the purchase of stamps from the District government. But it is generally believed that most or all this tax is shifted forward to consumers in the form of higher cigarette prices.[9] Economic incidence is the measure of interest in this study.

2. How should ability to pay taxes be measured? Various possibilities for measurement include income, total consumption, and wealth.[10] Income is the most commonly used measure in both empirical work. In this analysis we consider both income and total consumption as measures of ability to pay taxes.

3. If income is chosen as the measure of ability to pay taxes, do cross-section surveys of income and expenditures provide an adequate basis for measuring tax incidence by income class? Milton Friedman and others have argued that consumption in any one year depends on "permanent" (long-run average) income, rather than on annual income. If this is true, use of data concerning annual income and expenditures may overstate the relative burdens of sales and excise taxes on low-income taxpayers and understate the relative burdens on high-income taxpayers.[11] Because of the lack of data of "permanent" income, we have not attempted to measure this directly. We have used total consumption as an alternative measure of ability to pay; if the permanent-income hypothesis is correct, total consumption serves as a proxy for permanent income.

4. How "should" taxes vary by income level? A tax is progressive (proportional, regressive) if the ratio of tax paid to income increases (remains constant, falls) as income rises. We make no attempt to answer this question, since it goes far beyond economic analysis. We do present detailed data, however, which may be used to measure the burdens of various excise taxes by level of income and consumption.

5. To what degree may state and local governments pursue policies to redistribute income? If state and local governments try to redistribute income from higher to lower income families, this may create incentives for higher income families to move out and lower income families to move into the area. This could lead to serious erosion of the tax base.[12]

6. If an overall tax system "should" be progressive, may individual taxes in the system be regressive? It may be argued that any given re-

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[9] For econometric evidence in support of this view, see Paul B. Manchester, "Interstate Cigarette Smuggling," Public Finance Quarterly, 4:237 (April 1976).

[10] See Richard A. Musgrave and Peggy B. Musgrave, "Public Finance in Theory and Practice" (New York: McGraw-Hill 2d ed., 1976), pp. 220–224.

[11] See Musgrave and Musgrave, "Public Finance," pp. 442–444.

[12] See, for example, George Stigler, "The Tenable Range of Local Government," Federal Expenditure Policy for Economic Growth and Stability, U.S. Congress, Joint Economic Committee, 1957, pp. 213–19.

gressive tax may be offset by taxes alsewhere in the system that are sufficiently progressive. We do not attempt to deal with this question, which would require an analysis of the entire tax structure.

The basic source of data used in measuring excise tax burdens by level of income and consumption is the 1972–73 Consumer Expenditure Survey carried out by the Bureau of Labor Statistics with data collected by the Census Bureau.[13] Revision of the consumer price index is the primary reason for the Survey, but the data have many other uses, including the evaluation of various tax policies.

The Survey consists of two separate parts: an interview survey and a diary survey.[14] For the analysis of excise taxes, the most detailed data available are contained in "Average Annual Expenditures for Commodity and Service Groups Classified by Nine Family Characteristics, 1972 and 1973," Report 455–3, 1973.[15]

Tables 1a and 1b of Report 455–3 list for 1972 and 1973 selected family characteristics and annual expenditures by family income before taxes. Average income and expenditures on items subject to excise taxes in the District for 1972 and 1973 are given from the nationwide survey in table 2. Specifically, outlays for alcoholic beverages, tobacco products, gasoline, vehicle purchases, and lodging are presented.[16]

Ideally the data on expenditures could be used to estimate the amount of each tax paid by each income class. For an ad valorem tax of t percent, this may be done by multiplying expenditures by $t/(1+t)$, assuming complete shifting of taxes to consumers. For specific taxes, such as those on alcoholic beverages, cigarettes, and gasoline, it would be necessary to divide expenditures by average price and multiply the result by the tax rate. We have not obtained these estimates because of the lack of reliable data on average prices. Further, unless the average price paid varies by income class, the relative tax burdens by income class would be the same as the relative expenditures by income class.

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[13] This survey is discussed in Michael D. Carlson, "The 1972–73 Consumer Expenditures Survey," Monthly Labor Review 97 :16–23 (December 1974).

[14] For details, see Carlson, "The 1972–73 Consumer Survey."

[15] Additional useful data from the Survey will be available by 1978. This includes expenditures, by consumer income level, in the District of Columbia ; federal, state, and local taxes ; and standard errors.

[16] By making comparisons with other sources of data, estimates may be made of the degree of underreporting or overreporting of expenditures on various items. Of course, if two surveys differ, it is generally not possible to determine which is the more accurate. For whatever reason, however, consumers do appear to significantly underreport expenditures on alcoholic beverage and tobacco products. Specifically, the data in Report 455–3 may be compared with total personal consumption expenditures as reported in the national income accounts by the Bureau of Economic Analysis of the Department of Commerce. The Bureau of Labor Statistics estimates that expenditures for alcoholic beverages as reported in the interview survey amount to approximately 30 percent of the corresponding data in the national income accounts ; the corresponding figure for tobacco products is approximately 70 percent. Both these figures are preliminary estimates, however ; more accurate estimates will be forthcoming. The key question for our analysis is how the degree of underreporting (or overreporting) varies by income class. Unfortunately no information is available on this point. Thus we have assumed implicitly that the relative amount of underreporting is the same for all income classes.

Data from the survey on expenditures cross-classified by both income and type of area are not available. Data from Report 455–3 indicate, however, that in relation to average income before taxes, expenditures for the items listed in table 2 do not differ significantly between urban areas and the rest of the nation.

TABLE 2.—AVERAGE CONSUMER EXPENDITURES, BY INCOME CLASS, FOR ITEMS SUBJECT TO EXCISE TAXES IN THE DISTRICT OF COLUMBIA, 1972-73

Income class	Average number of families in universe [1] (thousands)	Average income before taxes	Average total current consumption	Average consumer expenditures				
				Recreation lodging	Alcoholic beverages [2]	Tobacco products	Vehicle purchases	Gasoline [2]
0 to $3,000	9,803.5	$1,700	$3,193	$7.06	$23.52	$69.15	$210.85	$115.93
$3,000 to $4,000	3,955.5	3,478	4,069	9.15	35.79	77.61	231.36	161.69
$4,000 to $5,000	3,635.0	4,473	4,632	15.18	41.73	90.06	304.91	204.90
$5,000 to $6,000	3,378.0	5,453	5,146	13.86	55.86	98.95	370.80	247.22
$6,000 to $7,000	3,354.5	6,476	5,574	14.15	50.11	114.86	439.80	274.65
$7,000 to $8,000	3,264.5	7,471	6,144	18.21	66.35	118.75	561.91	318.21
$8,000 to $10,000	6,667.5	8,956	6,831	25.19	71.54	130.75	614.77	371.49
$10,000 to $12,000	6,274.0	10,943	7,715	32.39	82.77	140.51	748.37	420.51
$12,000 to $15,000	8,296.0	13.405	8,835	41.58	91.91	156.62	885.62	493.12
$15,000 to $20,000	9,567.5	17,208	10,317	58.92	116.15	170.58	1,033.90	545.67
$20,000 to $25,000	4,760.5	22,069	12,319	91.53	134.84	170.14	1,218.19	622.76
$25,000 plus	4,489.5	39,278	16,096	146.75	195.13	157.55	1,479.11	615.25
Total	67,447.0	11,814	7,669	39.87	81.32	127.82	698.72	377.63

[1] Excluding families whose income is incompletely reported.
[2] Total of two separate entries in report 455-3.

Source: Calculations based on data in tables 1a and 1b of "Consumer Expenditure Survey Series: Interview Survey, 1972 and 1973," Report 455-3, U.S. Department of Labor, Bureau of Labor Statistics, 1976.

In tables 3, 4, and 5 we present several measures of consumer expenditures on items subject to excise taxes in the District by level of income before taxes and by total consumption expenditures. These measures are derived from the information given in table 2. Most studies have related excise tax burdens solely to income. We present consumption as an alternative base for the following reasons:

1. As discussed above, total consumption may be considered an alternative measure of ability to pay.
2. Total consumption may be a better proxy for "permanent income" than current income.
3. Differential incidence comparisons may readily be made between excise taxes and a general sales tax.

In table 3 we present, by income level, average expenditures on the item in table 2 as a percentage of income before taxes and as a percentage of total consumption. The data for the lowest three classes may be misleading because, as indicated in table 2, total consumption for these classes exceeds income, indicating that consumption is based on factors other than current income.

TABLE 3.—AVERAGE CONSUMER EXPENDITURES FOR ITEMS SUBJECT TO EXCISE TAXES IN THE DISTRICT OF COLUMBIA AS PERCENTAGE OF AVERAGE INCOME BEFORE TAXES AND AVERAGE TOTAL CURRENT CONSUMPTION, BY INCOME CLASS, 1972–73

Income class	Average consumer expenditures on indicated item as percentage of average income before taxes					Average consumer expenditures on indicated item as percentage of average total current consumption				
	Recreation lodging	Alcoholic beverages	Tobacco products	Vehicle purchases	Gasoline	Recreation lodging	Alcoholic beverages	Tobacco products	Vehicle purchases	Gasoline
0 to $3,000	0.4	1.4	4.1	12.4	6.8	0.2	0.7	2.2	6.6	3.6
$3,000 to $4,000	.3	1.0	2.2	6.7	4.6	.2	.9	1.9	5.7	4.0
$4,000 to $5,000	.3	.9	2.0	6.8	4.6	.3	.9	1.9	6.6	4.4
$5,000 to $6,000	.3	1.0	1.8	6.8	4.5	.3	1.1	1.9	7.2	4.8
$6,000 to $7,000	.2	.8	1.8	6.8	4.2	.3	.9	1.2	7.9	4.9
$7,000 to $8,000	.2	.9	1.6	7.5	4.3	.3	1.1	1.9	9.1	5.2
$8,000 to $10,000	.3	.8	1.5	6.9	4.1	.4	1.0	1.9	9.0	5.4
$10,000 to $12,000	.3	.8	1.3	6.8	3.8	.4	1.1	1.8	9.7	5.5
$12,000 to $15,000	.3	.7	1.2	6.6	3.7	.5	1.0	1.8	10.0	5.
$15,000 to $20,000	.3	.7	1.0	6.0	3.2	.6	1.1	1.7	10.0	5.3
$20,000 to $25,000	.4	.6	.8	5.5	2.8	.7	1.1	1.4	9.9	5.1
$25,000 plus	.4	.5	.4	3.8	1.6	.9	1.2	1.0	9.2	3.8
Total	.3	.7	1.1	5.9	3.2	.5	1.1	1.7	9.1	4.9

Source: Calculations based on data in table 2.

TABLE 4.—CUMULATIVE PERCENTAGES OF NUMBER OF FAMILIES, INCOME BEFORE TAXES, TOTAL CONSUMPTION AND EXPENDITURES ON ITEMS SUBJECT TO EXCISE TAXES IN THE DISTRICT OF COLUMBIA, BY INCOME LEVEL 1972–73

Income class	Number of families	Income before taxes	Total current consumption	Total expenditures				
				Recreation lodging	Alcoholic beverage	Tobacco products	Vehicle purchases	Gasoline
0 to $3,000	14.5	2.1	6.1	2.6	4.2	7.9	4.4	4.5
$3,000 to $4,000	20.4	3.8	9.2	3.9	6.8	11.4	6.3	7.0
$4,000 to $5,000	25.8	5.9	12.4	6.0	9.6	15.2	8.7	9.9
$5,000 to $6,000	30.8	8.2	15.8	7.7	13.0	19.1	11.3	13.2
$6,000 to $7,000	35.8	10.9	19.4	9.5	16.1	23.6	14.5	16.8
$7,000 to $8,000	40.6	14.0	23.3	11.7	20.0	28.1	18.4	20.9
$8,000 to $10,000	50.5	21.5	32.1	17.9	28.7	38.2	27.1	30.6
$10,000 to $12,000	59.8	30.1	41.4	25.5	38.2	48.4	37.0	41.0
$12,000 to $15,000	72.1	44.0	55.6	38.3	52.1	63.5	52.6	57.0
$15,000 to $20,000	86.3	64.7	74.7	59.3	72.3	82.4	73.6	77.5
$20,000 to $25,000	93.3	77.9	86.0	75.5	84.0	91.8	85.9	89.2
$25,000 plus	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculations based on data from table 2. (Excludes families whose income is incompletely reported.)

TABLE 5.—ELASTICITIES TO EXPENDITURE WITH RESPECT TO INCOME BEFORE TAXES, FOR ITEMS SUBJECT TO EXCISE TAXES IN THE DISTRICT OF COLUMBIA, 1972–73 (WITH STANDARD ERRORS IN PARENTHESES)[1]

Item	Elasticity: With respect to income before taxes		Elasticity: With respect to total consumption	
Recreation lodging	1.06	(0.075)	1.49	(0.084)
Alcoholic beverages	.69	(0.022)	1.25	(0.049)
Tobacco products	.34	(0.039)	.61	(0.074)
Vehicle purchases	.73	(0.049)	1.34	(0.076)
Gasoline	.61	(0.046)	1.10	(0.094)

[1] An elasticity greater than 1 indicates a progressive tax, less than 1 a regressive tax.

E_{ij} = average expenditure.

Y_j = average income before taxes.

C_j = average total consumption.

then the models estimated are:

$\log E_{ij} = a_o + 1_1 \log Y_j$.

$\log E_{ij} = a_o + a_1 \log C_j$.

The estimates of a_1 and their standard errors are given in the table. There are (n–2) or 10 degrees of freedom (counting each average as only one observation). In all cases, R^2 exceeded 0.87. Similar results were obtained by using weighted least squares logarithmic regressions to correct for possible heteroscedasticity; this procedure is discussed in J. Johnston Econometric Methods, second edition, pp. 228–238 and P. Rao and R. Miller, Applied Econometrics, 1971, pp. 116–121.

In table 4 we present, by income level, the cumulative percentages of families, income before taxes, total consumption, and total expenditure for the items listed in table 2. The primary advantage of this method of data presentation over that in table 3 is that this approach takes into explicit account the number of families at each income level.[17] This information could be used to construct any desired Lorenz curves and related Gini coefficients. Comparisons between the columns indicate the regressivity or progressivity of the various excise taxes.[18] For example, the cumulative percentages for expenditures on alcoholic beverages exceed those for income, indicating that alcoholic beverage taxes are regressive with respect to income because the percentage of total outlays for alcoholic beverages accounted for by the lower portion of the income distribution exceeds the percentage of total income accruing to this group. The cumulative percentages for expenditures on alcoholic beverages are less than those for total consumption, indicating that taxes on alcoholic beverages are progressive with respect to total consumption because the percentage of total outlays for alcoholic beverages accounted for by the lower portion of the income distribution is less than the percentage of total consumption accounted for by this group.

In table 5 we present elasticities of expenditure with respect to income before taxes and total consumption.[19] These have been obtained

[17] In a recent study, Pechman and Okner (*Who Bears the Tax Burden?*, 1974, p. 48) stated that "The distribution of tax burdens is usually presented by absolute income levels, an arbitrary classification that tends to exaggerate the significance of the data in some parts of the income distribution and diminish it in other parts." They explained this question further and discussed Lorenz curves and Gini coefficients on pages 4–6, 46–52, 55–6. Greene, Neenan, and Scott (pp. 214–5) using 1960–61 data, presented percentages of total expenditures on various items by income class; if their percentages were cumulated, the resulting data would be in the same form as that in table 4. A measure based on data such as that in table 4 is discussed by Daniel Suits, "Measurement of Tax Progressivity," *American Economic Review* 67:747–52 (September 1977).

[19] This is essentially the procedure followed by Thomas W. Calmus, "The Burden of Federal Taxes by Income Classes," *Quarterly Review of Economics and Business* 10:17–23 (Spring 1970).

[19] These elasticities measure the ratio of percentage change in expenditure for the indicated item to the percentage change in income or total consumption. They correspond to "liability progression" as discussed in Musgrave and Musgrave," Public Finance, p. 286.

by logarithmic regressions using the data in table 2. Values less than 1 indicate a regressive tax, values greater than 1, a progressive tax. On the basis of these results, the excises under study may be classified into three groups:

Regressive with respect to both income and total consumption: tobacco tax.

Regressive with respect to income, progressive with respect to total consumption: taxes on gasoline, alcoholic beverages, and automobiles.[20] [21]

Progressive with respect to both income and total consumption: transient accommodations tax.[22]

It would be desirable to have estimates of the income elasticities of demand over time for the various goods subject to excises in the District. These could be utilized with projections of income growth to develop long-term revenue forecasts. Ideally, the income elasticity would be estimated from time-series data on income and other determinants of demand for the District. We have not done this, but we have estimated income elasticities above from cross-section data from the Consumer Expenditure Survey for the U.S. as a whole. If spending patterns by income level in the District differ significantly from the overall U.S. patterns, or if District time-series spending patterns differ significantly from District cross-section patterns, these estimates are biased estimates of District time-series elasticities. But if the results above are indicative of the magnitudes of the time-series elasticities for the District, they indicate that the most promising source of excise tax growth is the transient accommodations tax, and the least promising source is the cigarette tax.[23]

IV. Major Issues Concerning Excise Taxes in the District of Columbia

In this section we discuss a general model of the markets for the various goods subject to excise taxes in the District. Ideally, the parameters of this model could be estimated by econometric methods. But such an analysis would require detailed data on all relevant factors for each good over a number of years. Many of these data do not appear to be available; for that reason we have not estimated a formal econometric model. For each tax, however, we do discuss the key

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[20] The elasticity of gasoline expenditures with respect to total consumption is not significantly greater than 1.00 at the 10 percent significance level. Thus the hypothesis of proportionality of the gasoline tax with respect to total consumption cannot be rejected. In a recent study, James P. Stucker, "The Distributional Implications of a Tax on Gasoline," Policy Analysis 3:171–86 (Spring 1977), argues that the gasoline tax is quite regressive." Stucker's article also contains a comprehensive bibliography on this question.

[21] Calmus, "The Burden of Federal Excise Taxes by Income Classes," using more detailed data from the 1960–61 Survey of Consumer Expenditures, found that the federal excises on beer and wine were regressive but the tax on distilled spirits was progressive with respect to income.

[22] The elasticity of expenditures for recreation lodging with respect to income before taxes is not significantly less than 1.00 at the 10 percent significance level. Thus the hypothesis of proportionality of the transient accommodations tax with respect to income before taxes cannot be rejected.

[23] Cross-section elasticities, by definition, do not explicitly relate expenditures and income at various points in time. Thus, even if they are indicative of time-series elasticities, a further question arises as to whether they provide estimates of short-run or long-run elasticities. This appears to be an unresolved econometric question. Klein ("An Introduction to Econometrics," 1962, p. 54) and Koutsoyannis ("Theory of Econometrics," 1973, p. 395) view cross-section elasticities as long-run in nature; others view them as short-run.

factors and review, where it is appropriate to do so, relevant studies and/or provide "ballpark estimates."

We then develop a general relation for determining the revenue productivity of changes in excise tax rates. If detailed estimates of elasticities of demand and supply become available, these estimates could be substituted into the relation to yield more accurate forecasts of the effects of rate changes.[24]

This general model could also be used to estimate current and projected levels of gains or losses in interlocality sales attributable to differences in excise tax rates.

For each tax we then present:

1. A brief discussion of the rationale of the tax.
2. A review of relevant studies of elasticities of demand and supply and estimates of interlocality sales.

Finally, we present and review the detailed forecasts of excise tax revenues made by the Department of Finance and Revenue for fiscal years 1977 through 1983. In general, these forecasts appear to be conservative.

We do not discuss questions of tax administration, because these matters go beyond the scope of this study. It should be kept in mind, however, that while economic and statistical analyses are necessary in the consideration of tax policies, they are not sufficient in themselves, and in some cases they may overlook important administrative questions.

In analyzing excise taxes, the price elasticity of demand is one of the most important factors; it may be used to estimate the level of sales at various tax rates. In general, elasticities of demand may be estimated by econometric studies of time-series and/or cross-section data. For this study, a time-series analysis of District data on price and quantity of sales would be most appropriate. Price and quantity of sales should not be studied in isolation, however. Such a procedure would not only omit many of the other important determinants of demand, but perhaps even more seriously, would yield biased estimates of the price elasticity of demand. Other factors besides prices in the District which would appear to be major determinants of demand for the items under study include:[25]

1. Population in the District. This would usually be taken into account by analyzing sales per capita.
2. Number of commuters to and from the District.
3. Number of tourists and business visitors.
4. Real per capita income in the District.
5. Prices in surrounding localities.
6. Population in those surrounding localities with higher prices.
7. Seasonal variations in sales. These might be dealt with by the use of seasonally adjusted data or by the use of seasonal factors (coadjustment) in the demand equation.
8. Trend variable.

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[24] The Department of Finance and Revenue makes some allowance at present for the elasticity of demand in forecasting the effects of rate changes, but does not use a formal model.

[25] For a model similar to that described herein, see Manchester, "Interstate Cigarette Smuggling."

9. For cigarettes, the "health scare" arising from concern about the link between smoking and health.

10. For alcoholic beverages, minimum legal ages for the purchase of beverages in the District and surrounding localities and any differences in store hours between localities.[26]

Data on many of these items do not appear to be readily available, however. Rather than undertaking detailed econometric analyses, therefore, in the section below we have reviewed relevant information in order to obtain approximate estimates of the various price elasticities of demand.

The effects on tax revenue of changes in excise tax rates may be found by the following revenue productivity formula, derived in the Appendix.

If

P=price net of tax
T=specific tax rate
e_D=elasticity of demand (negative)
e_S=elasticity of supply

then percent change in tax revenue = A × percent change in tax rate, where:

$$A=1+\frac{e_S e_D T}{e_S(P+T)-e_D P}$$

The tax rate T^*/ which maximizes revenue is

$$T^*=\frac{P(e_D-e_S)}{e_S(1+e_D)}$$

If demand is inelastic (e_D greater than -1), the tax rate may be increased indefinitely without leading to a decrease in tax revenue.
If net price P is fixed (as with a horizontal supply curve), as shown in the Appendix, the formulae for A and T* simplify to:

$$A=1+\frac{T}{P+T}e_D$$

$$T^*=-\frac{P}{1+e_D}$$

If accurate estimates of these elasticities become abailable, these revenue-productivity formulae could be used with the forecasting methods employed by the Department of Finance and Revenue of the District of Columbia.

[26] Another factor cited by the Prince George's County Executive as contributing to the growth of liquor sales in Maryland at the expense of sales in the District is the introduction of the Maryland lottery. This was also discussed in the Washington Post, July 29, 1977, p. 1.

Estimating gains or losses in interlocality sales arising from differing levels of excise taxes is a complex problem. Sales in the District obviously would appear to be most affected by prices in Maryland and Virginia. But there may be some effects due to prices in more distant localities; for example, cigarettes may be smuggled in from North Carolina, where taxes are low. Even restricting attention to Maryland and Virginia does not make the matter simple; as discussed above, cigarette taxes (and presumably prices) vary widely among the localities in Northern Virginia.

To simplify the analysis, one may consider all neighboring localities as an aggregate, hereafter referred to as MDVA. Prices in MDVA can be measured by a weighted average of the prices in the various localities in Maryand and Virginia.

If price in the District exceeds price in MDVA, then presumably there is a loss in sales and tax revenue by the District to MDVA. This can be measured by subtracting actual sales in the District from estimated sales in the District if the price in MDVA were increased to the District level.

If price in the District is lower than price in MDVA, then presumably there is a gain in sales and tax revenue to the District from MDVA. This can be measured by subtracting estimated sales in the District if the price in MDVA were reduced to the District level from actual sales in the District.

In either case it would be necessary to have an estimate of the cross elasticity of demand in the District with respect to price in MDVA; this elasticity could be determined by econometric analysis.

A. TRANSIENT ACCOMMODATIONS TAX

The transient accommodations tax of 8 percent exceeds the general sales tax rate of 5 percent. Thus the "excise tax" can be thought of as the additional 3 percent tax on accommodations.

Rationales for the tax include the following:

1. Tourists benefit from many services provided by the District and should be taxed accordingly. The transient accommodations tax could be considered part of the broader category of "tourist taxes." That is, there are many tourists who stay in private homes or in the suburbs and thus are not subject to the District's transient accommodations tax. To deal with this problem other "tourist taxes" might be imposed on services such as tour buses, admissions, and car rentals. (The existing taxes on restaurant meals and parking in commercial lots could also be considered as part of this broader area.)

2. The tax appears to be progressive, as seen in section III.

3. The tax base may have a high growth potential, especially if a Civic Center is constructed in the District. In a recent study, Gladstone Associates estimated that such a center could generate additional total revenue for the District of more than $14 million a year (in 1976 dollars), of which $3.5 million could be obtained from the transient accommodations tax.[27]

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[27] Gladstone Associates, "Feasibility Analysis for a Civic Center in Washington, D.C., Findings and Conclusions," prepared for the District Municipal Planning Office, March 1977, pp. 35–36.

4. On pragmatic grounds, there is little political opposition to the tax for the obvious reason that tourists do not vote in the District. That is, the tax is exported to nonresidents.

Estimates of the economic impact of tourism on the District for 1975 are presented in table 6. As indicated, estimated lodging expenditures amounted to $192.5 million; at the 6 percent rate in effect at that time, excise taxes on this amount would have yielded $11.55 million in revenue. In table 1, transient accommodations tax revenues were given as $8.272 million in fiscal year 1975 and $9.31 million in fiscal year 1976. We have not determined the factors which account for this discrepancy.

The transient accommodations tax could in theory have a number of possible effects on tourists: It could reduce the total number of tourists coming to the Washington area; it could encourage those who do come to stay in the suburbs; it could reduce the length of visit for those staying in the District; it could encourage visitors to stay in less expensive hotels; or it could lead to reductions in expenditures on items other than lodging (and thereby to reduced tax revenues from these other sources). Estimation of these effects would require a detailed econometric model, beyond the scope of this study.[28] Thus a more general discussion is presented below.

TABLE 6.—DIRECT EXPENDITURES AND EMPLOYMENT, PAYROLL AND TAX RECEIPTS GENERATED BY DOMESTIC TRAVEL TO THE DISTRICT OF COLUMBIA, BY CATEGORY OF EXPENDITURE, 1975

[Dollar amounts in millions]

Category of expenditure	Direct expenditures	Travel-generated			
		Employment (thousands of persons)	Payroll	Taxes	
				Federal	Local
Transportation:					
Public	$118.7	2.9	$43.3		
Automobile	65.4	.9	7.4		
Lodging	192.5	11.3	84.2		
Food service	227.9	12.9	74.2		
Entertainment and recreation	37.1	1.1	11.0		
Incidental purchases	58.5	1.1	9.2		
Travel arrangements		.9	7.1		
Total	700.1	31.1	236.4	$54.5	$45.9

Sources: U.S. Travel Data Center, The Impact of Travel on State Economies, 1975 (Washington, D.C. 1977).

TABLE 7.—ROOM RATES AT 25 HOLIDAY INNS IN THE DISTRICT OF COLUMBIA AND VICINITY, JUNE 1, 1977

Location	Number of inns	Rate for indicated accommodations					
		1 person—1 bed			2 persons—2 beds		
		Low	Median	High	Low	Median	High
District of Columbia	6	$25	$32.50	$39	$36	$42.50	$49
Maryland: Inside I-495	4	20	29.00	30	28	36.50	39
Maryland: Outside I-495	5	19	23.00	30	25	31.00	36
Virginia: Nearby [1]	3	[2] 23–27	30.00	30	[2] 30–35	39.00	39
Virginia: Other	7	20	27.00	31	[2] 26–30	36.00	38
Total	25	19	29.00	39	25	36.00	49

[1] Within 3 miles of the White House.
[2] Range indicates seasonal variations in rates.

Source: Holiday Inn Directory, effective June 1, 1977. Rates exclude transient accommodations taxes.

[28] Such a model has been estimated for Hawaii by James Mak and Edward Nishimura: "The Economics of a Hotel Room Tax." Study for the Department of Planning and Economic Development, State of Hawaii, June 1977.

Comprehensive data on hotel/motel room rates in the Washington area are not readily available; even if available, such data could disguise important differences in the quality of accommodations between areas. But in table 7 we present information on rates at the area's 25 Holiday Inns. A clear pattern emerges: median rates are highest in the District, followed by those in nearby Virginia, Maryland inside I-495, other location in Northern Virginia, and Maryland outside I–495, respectively.[29] This pattern conforms to the expectation that rates would be lower as distance from the major tourist, government, and business attractions in the District increases. These lower rates are at least in part offset by higher commuting costs from the suburban areas.

Traditionally, the effects of excise taxes on consumer behavior are analyzed in terms of their equivalent impacts on prices. This procedure may be appropriate in cases such as cigarettes, gasoline, and alcoholic beverages, where the price quoted to the consumer would automatically include the tax. Such a procedure may not be valid for the transient accommodations tax: consumers may not be aware of the precise amount of the tax until they pay the bill at the end of their stay.[30] In this case, significant impacts on consumer behavior are unlikely.

In analyzing the transient accommodations tax, a distinction should be made between tourists and business and convention travelers. Many of the latter may have their costs paid by the firms they represent; in this situation demand would be relatively price inelastic.

Direct evidence of the economic characteristics of hotel guests in the District does not appear to be available. However, in table 8 we have made estimates on the basis of data from the 1972 National Travel Survey. We have combined data on total person-nights spent in the District with data on the percentage of person-nights in the Mid-Atlantic region (which includes the District) spent in commercial establishments. Of the total person-nights spent in Standard Metropolitan Statistical Areas in the Mid-Atlantic region, 31.6 percent were spent in commercial establishments. Applying this percentage to the 11,107,000 person-nights spent in the District yields an estimate of 3,509,000 person-nights in commercial establishments in the District in 1972. We have then applied the region wide percentages spent in commercial establishments for each classification to the totals for each classifications for the District to yield the estimates in column 3. These have then been adjusted proportionately to yield the estimates in column 4, with the corresponding percentages in column 5.

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[29] But note that there are a wide range of rates within each region and overlaps between regions; for example, the highest one person-one bed rate outside I–495 in Maryland exceeds the lowest corresponding rate in the District.

[30] Further evidence suggesting low consumer awareness of transient accommodations tax rates includes the absence of such information in the "Hotel/Motel Red Book" and the American Automobile Association's "Tour Book" and (on the basis of a small telephone sample) the failure of many hotel reservation offices in the District to cite the tax rate unless specifically asked.

TABLE 8.—TOTAL PERSON-NIGHTS SPENT IN THE DISTRICT OF COLUMBIA, AND ESTIMATED PERSON-NIGHTS SPENT IN COMMERCIAL ACCOMMODATIONS IN THE DISTRICT OF COLUMBIA, BY VARIOUS CLASSIFICATIONS, 1972

Classification	Percentage of total person-nights spent in commercial establishments, Mid-Atlantic region [1]	District of Columbia [2]			
		Number of person-nights (thousands)			Percentage of total number of person-nights in commercial establishments (estimated)
			In commercial establishments (estimated)		
		Total	Unadjusted [3]	Adjusted [4]	
Total	29.9	11,107	([5])	3,509	100.0
Purpose of trip:					
Visit friends and relatives	8.1	3,607	292	184	5.2
Business and conventions	80.2	4,725	3,789	2,388	68.1
Sightseeing and entertainment	64.1	2,058	1,319	831	23.7
Outdoor recreation, other	23.3	716	167	105	3.0
Family income:					
Under $5,000	21.4	1,630	349	357	10.2
$5,000 to $7,499	14.7	1,040	153	156	4.5
$7,500 to $9,999	18.5	1,669	309	316	9.0
$10,000 to $14,999	34.7	2,342	813	831	23.7
$15,000 and over	42.2	4,098	1,729	1,766	50.3
No answer	25.2	327	82	84	2.4
Race:					
White	30.0	8,925	2,681	2,869	81.8
Nonwhite	27.4	2,150	588	629	17.9
No answer	31.0	31	10	11	.3
Number of persons on trip:					
1	45.1	5,363	2,419	2,157	61.5
2	31.6	3,018	954	851	24.3
3 to 5	20.9	2,502	523	466	13.3
6 or more	17.3	224	39	35	1.0

[1] Pennsylvania, Delaware, Maryland, Virginia, West Virginia, and the District of Columbia.
[2] All travel to and through the District of Columbia.
[3] Percentages in 1st column multiplied by totals in 2d column without adjustment of total.
[4] Percentages in 1st column multiplied by totals in 2d column with proportional adjustments to yield total of 3,509,000 person-nights.
[5] Unadjusted totals, by classification, are: Purpose of trip, 5,567; family income, 3,435; race, 3,279; number of persons on trip, 3.935.

Sources: Cols. 1, and 2: Calculated from data in National Travel Survey, Travel during 1972, 1972 Census of Transportation, pp. 54, 55, 77, 78; col. 3: col. 1 multiplied by col. 2; col. 4: col. 3 adjusted to yield total of 3,509,000 person-nights; col. 5: col. 4 expressed as percentage of column total.

If the regionwide percentage in commercial establishments differ greatly from the percentages for the District, these estimates may be inaccurate. But there is no reason to believe that the divergencies are great.

On the basis of these estimates, a clear pattern emerges. The typical hotel guest in Washington is not the middle-income family on a sightseeing trip, but the upper-income individual traveling on business or attending a convention. We estimate that the median income in 1972 of the typical hotel guest exceeded $15,000. Further evidence on the economic characteristics of convention travelers is contained in a 1975 study by Gladstone Associates. [31] In 1974, the average overnight visitor in Washington stayed 2.7 days, with average expenditures of $28.02 a day in 1972 dollars. This would have amounted to $76 a visit in 1972 dollars; the average conventioneer in 1973 stayed 4.4 days, with average total spending of $52.57 a day for a total of $231 a visit in 1973 dollars.[32] For such individuals, proximity to their business or conven-

[31] Gladstone Associates, "Visitors and Their Contribution to the Washington Economy, 1974," prepared for the Washington Area Convention and Visitors Bureau, February 1975.
[32] Gladstone Associates, 1975, pp. 1–5, 3–5, 1–4.

tion activity is the primary consideration in choosing accommodations; the probability that they would select a hotel or motel outside of the District because of the transient accommodations tax is very small.[33] For this group, it appears that the tax could be increased with little impact on the local hotel/motel business.

However, for the approximately 30 percent of guests who are middle-income families sightseeing or visiting friends and relatives, demand may be more price elastic. Other factors suggesting some degree of elasticity include: organizers of tours and conventions, who deal with large groups, may be aware of and sensitive to differences in the price of accommodations in the area; commuting costs from Virginia are relatively low; and Metro will reduce commuting time from suburban locations.

To summarize, an estimate of the price elasticity of demand for hotel accommodations in the District is not available. However, we believe that overall the demand is inelastic and that the transient accommodations tax is progressive.[34] These factors suggest that the transient accommodations tax could be increased. However, this conclusion should be tempered if there is concern about pricing middle-income tourists out of the market.[35] The impact of the increase in the rate to 8 percent as of July 1, 1976 should be analyzed carefully; but this analysis may be difficult because of the influx of tourists for the Bicentennial activities.[36]

B. ALCOHOLIC BEVERAGE TAXES

Alcoholic beverage taxes include the excises on beer, wine, and distilled spirits. As indicated in table 1, above, of the $11.5 million in revenue in fiscal year 1976, 83 percent was obtained from the tax on distilled spirits, 11 percent from the tax on beer, and 6 percent from the tax on wine. For this reason, most of this section will be focused on the tax on distilled spirits.

The two most common rationales for excises on alcoholic beverages are:

1. These taxes are sumptuary in nature, intended to discourage consumption.

2. These taxes are a "good" source of revenue, because rates can be increased without significantly reducing the quantity of sales.

Obviously these rationales are somewhat contradictory—the first is true if demand is elastic, the second if demand is inelastic. For the District, it is theoretically possible that neither of these two rationales might hold. That is, higher taxes might reduce sales because of the ready availability of alcoholic beverages in suburban locations. But if this were the case, the sumptuary goal would not be met either.

Another rationale which is cited is that the consumption of alcoholic beverages may create social costs in excess of private costs as a result of accidents, health costs, decreases in productivity, crime, and

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[33] In one study it was estimated that 90 percent of delegates to conventions in the District stay in District hotels. Gladstone Associates, "Feasibility Analysis," March 1977, p. 36.

[34] This belief about inelasticity of demand is reinforced by the apparent lack of outcry by the hotel owners in response to the increase in the tax rate to 8 percent in July 1976.

[35] This may already have occurred to some degree.

[36] If such an analysis is undertaken, data on hotel occupancy rates may be obtained on written request to the Hotel Association of Washington.

so on. In such a case of "external effects," a tax equal to the difference between social and private costs may be warranted.[37]

Several recent analyses have reviewed the various estimates of the price elasticity of demand for alcoholic beverages.[38] Of these studies, the most relevant appears to be a 1974 study of the District of Columbia.[39] Unfortunately the details concerning the data, time period studied, and the statistical methods used were not given. But by regression analysis it was estimated that an increase in the price of a typical fifth of a gallon of distilled spirits from $4.65 to $4.75 (2.15 percent) would decrease sales by 4.6 percent. This would correspond to an elasticity of −2.14. While this precise value may not be correct, demand would appear to be highly elastic, perhaps with a price elasticity in the range between −1.50 and −2.50.

The sensitivity of sales to price is further suggested by the data in table 9. As shown, per capital sales in 1976 in the District were 230 percent greater than the average for the United States. The District was second only to Nevada in per capita sales. Obviously this high sales figure indicates substantial purchases by tourists and commuters.[40] If prices in the District increased markedly, many commuters would cease purchasing alcoholic beverages in the District.

TABLE 9.—APPARENT PER CAPITA CONSUMPTION OF DISTILLED SPIRITS, DISTRICT OF COLUMBIA, MARYLAND, VIRGINIA, AND UNITED STATES, 1968–76

[Gallons]

Year	District of Columbia	Maryland	Virginia	United States
1968	7.32	2.03	1.60	1.73
1969	7.66	2.18	1.66	1.80
1970	7.57	2.23	1.66	1.83
1971	7.70	2.34	1.68	1.85
1972	7.44	2.42	1.71	1.89
1973	6.92	2.49	1.76	1.93
1974	6.82	2.56	1.75	1.97
1975	6.74	2.62	1.74	1.99
1976	6.54	2.61	1.73	1.98

Source: Distilled Spirits Council of the United States.

The excise tax on alcoholic beverages in the District was last increased from $1.50 per gallon to $2.00 per gallon on December 1, 1969. For the 12 months preceding the increase, sales in the District amounted to 6.121 million gallons; for the succeeding 12 months sales totaled 5.714 million gallons, a drop of 6.7 percent.[41]

[37] For a detailed discussion of all of these rationales see Floyd Duncan, "Alternative Criteria for Levying Alcohol Excise Taxes, with Special Emphasis on South Carolina" (Ph. D. dissertation, University of South Carolina, 1972).

[38] For a detailed bibliography, see Julian Simon, "The Price Elasticity of Liquor in the U.S. and a Simple Method of Determination," Econometrica, 34:193–205 (January 1966), and James Johnson and Ernst Oksanen, "Socio-economic Determinants of the Consumption of Alcoholic Beverages, Applied Economics, 6:293–301 (1974).

[39] The District of Columbia Alcohol Beverage Industry, "Alcohol Beverages in Washington, D.C.: A Declining Industry," 1974.

[40] Greene, Neenan, and Scott (p. 232) estimated that in fiscal 1970, 44.2 percent of total liquor purchases in the District of Columbia were made by District residents, 28.5 percent by Maryland residents, 23.1 percent by Virginia residents, and 4.2 percent by others.

[41] Data suppled by Distilled Spirits Council of the United States. In Simon, "The Price Elasticity of Liquor in the U.S.," an adjustment was made to allow for possble stock-up before price increases and liquidation of stock-up after price increases. We have nt made such an adjustment, because a floor stock tax was imposed in the District on dealers' inventory at the time of the tax increase.

Another fact which is brought out clearly in table 9 is the decline in per capita sales in the District in recent years. From 1971 to 1976, per capita sales in the District fell 15 percent, while sales per capita increased 12 percent in Maryland and 3 percent in Virginia. In suburban Maryland sales have also increased; from fiscal 1970 to fiscal 1975, sales per capita rose from 1.89 gallons to 2.52 gallons (33 percent) in Prince George's County and from 1.43 gallons to 1.46 gallons (2 percent) in Montgomery County. Per capita sales rose from 3.99 gallons to 15.47 gallons (288 percent) in Cecil County, in the northeast corner of Maryland.[42] Clearly the trend in the District is in the opposite direction from national, state, and local trends. It should be noted, however, that this reduction in per capita sales in the District has occurred in the *absence* of any increase in the tax on distilled spirits. Possible explanations for the trend include a shift by consumers from purchases in the District to purchases in the suburbs, due to an increase in the number of suburban outlets; increasingly aggressive sales techniques in the suburbs; the trend toward increased sales in general in suburban shopping centers; longer package store hours in Maryland, or fear of crime in the District; some apparent shift in District consumers' tastes from distilled spirits to wine, which is subject to a lower tax rate; legalization of on-premise sales in many areas of Virginia, and growth in the number of such outlets in suburban Maryland; and the June 1973 reduction of the minimum age for purchasing beer and wine in Maryland, from 21 to 18. Of course the downward trend in the sales of distilled spirits probably would have been even more pronounced if the tax rate had been increased.

There appears to be no ready way to measure the net gain or loss to the District from interlocality sales. There are purchases in the District by nonresidents and purchases outside the District by residents. It is clear that the District has lost some of its reputation as a well-known source of inexpensive alcoholic beverages. The evidence cited above suggests that persons from Pennsylvania, New Jersey, and other states who formerly might have purchased beverages in the District now buy in Cecil County, Maryland. Others may buy in Prince George's County, where the number of retail outlets has grown rapidly.

For the reasons cited above, it appears that alcoholic beverage taxes are not likely to be a significant source of future revenue growth for the District.

C. CIGARETTE TAX

Many of the considerations raised above about alcoholic beverage taxes also apply to the cigarette tax. In particular, the "sumptuary" and "good source of revenue" rationales are somewhat contradictory. And the prevalence of interlocality sales is also well documented for cigarettes.

A number of studies of the demand for cigarettes have been carried out.[43] Most analyses have used national time series data and thus

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[42] Data from the Annual Reports of the Maryland Comptroller of the Treasury. Per capita sales data for Northern Virginia ae not readily available.

[43] For a comprehensive bibliography, see Paul B. Manchester, "An Econometric Analysis of State Cigarette Taxes, Prices, and Demand, with Estimates of Tax-Induced Interstate Bootlegging," Ph. D. thesis, University of Minnesota, 1973, pp. 37–41.

have been of limited usefulness in answering questions about the effects of changes in state taxes and interstate smuggling. The national price elasticity of demand is clearly less (in absolute value) than the elasticity in most states. Of the studies which have employed state data none has specifically analyzed the District. The highest state elasticity reported has been −2.03, for New Hampshire.[44] A detailed study of the District would be warranted, but several analogies suggest that the New Hampshire estimate may be relevant to the District. Both are small geographical units, surrounded by large states; both have large numbers of nonresidents (tourists and commuters); and both have been known as sources of relatively inexpensive alcoholic beverages, with some probable impact on cigarette sales. Thus by rough analogy, an elasticity of −1.50 to −2.50 seems plausible for the District.

This estimate of highly elastic demand in the District is reinforced by the data in table 10. The following results, obtained from the table, are indicative:

Fiscal year	District of Columbia cigarette tax (cents per pack)	Per capita sales in District of Columbia as percentage of median of all taxing States
1964–66	2	218
1967–69	3	192
1970–72	4	175
1973–75	6	153
1976	10	131

TABLE 10.—CIGARETTE TAX RATE AND SALES, THE UNITED STATES, THE DISTRICT OF COLUMBIA, MARYLAND NORTHERN VIRGINIA, AND VIRGINIA, FISCAL YEARS 1961–76

[Tax rate in cents per pack; sales in packs per (capita)]

Fiscal year	U.S. sales [1]	District of Columbia		Maryland		Nothern Virginia [2]		Virginia	
		Tax	Sales	Tax	Sales	Tax	Sales	Tax	Sales
1961	120.3	2	215.1	3	122.9			3.0	120.0
1962	119.9	2	236.3	6	120.0			3.0	124.1
1963	120.8	2	246.4	6	122.7			3.0	122.8
1964	115.7	2	235.3	6	122.2			3.0	118.5
1965	120.5	2	246.5	6	121.0			3.0	123.3
1966	120.2	2	295.9	6	121.0			3.0	120.2
1967	120.4	3	249.8	6	121.7			2.5	120.9
1968	118.6	3	224.3	6	121.7			2.5	122.8
1969	117.6	3	212.2	6	122.3			2.5	123.9
1970	119.0	4	200.4	6	123.5			2.5	124.3
1971	119.8	4	213.0	6	126.7	7.5	90.0	2.5	128.4
1972	123.5	4	220.6	6	133.2	8.2	101.1	2.5	137.0
1973	121.8	6	209.4	6	137.3	8.2	101.9	2.5	143.1
1974	125.6	6	182.7	6	144.8	8.2	100.7	2.5	149.6
1975	123.9	6	176.5	10	146.1	8.2	100.2	2.5	152.7
1976	127.7	10	167.7	10	137.1	9.2	104.2	2.5	158.1

[1] Median of taxing States.
[2] Alexandria, Arlington Country, and Fairfax County. Tax rate is combined State and local median rate. Data for years earlier than 1971 not available.

Source: Tobacco Tax Council.

[44] Manchester, "Interstate Cigarette Smuggling," p. 232.

Sales since the increase in the cigarette tax rate to 13 cents per pack as of July 1, 1976, further corroborate the hypothesis of highly elastic demand. For the period July 1976 to June 1977, sales in the District were 20.1 percent below those for the corresponding period for 1975–76, when the tax was 6 cents per pack for 5 months and 10 cents per pack for 7 months.[45] This sizable drop in sales occurred despite the increase in the number of tourists in the District in 1976–77 attracted by the Bicentennial and the Inauguration. If this trend continues, it suggests that the District may be near the point of negative returns with regard to the cigarette tax rate: further increases might reduce sales so much that total cigarette tax revenue could actually fall. Of course, this possibility might be offset somewhat by steps to curb cigarette smuggling, but such efforts might be costly in relation to any gain in revenue.

In a recent study the Advisory Commission on Intergovernmental Relations analyzed the cigarette bootlegging problem in the United States.[46] The Commission used data for fiscal year 1975, when the tax rate in the District was 6 cents per pack. But they pointed out that with the recent increases in tax rate, the decline in sales, and the relatively lower rates in Maryland and Virginia, the District now probably would be added to the list of 14 states with cigarette smuggling problems.[47]

In an earlier study, the Commission discussed the loss of revenue caused by the tax exemption of goods sold on military post exchanges.[48] The Commission estimated that in fiscal year 1973, when the cigarette tax rate was 4 cents per pack for five months and 6 cents per pack for seven months, the District lost $1,778,000 due to the exclusion from the tax of sales of cigarettes on military bases. At the current rate, the loss probably exceeds $3 million per year. The loss of revenue due to the exclusion of on-base sales from the alcoholic beverage taxes was also discussed, but estimates of the amount of this loss were not presented. The Commission recommended that state and local taxes be applied to on-base sales to military personnel.

D. MOTOR VEHICLE TAXES

These include the title issuance excise tax of 4–7 percent of market value, depending on weight, and the annual automobile registration fees of $50–$96, also graduated by weight (to be reduced to $35–$76 as of October 1, 1977).[49]

1. Title Issuance Excise Tax

The District appears to be unique in graduating this tax by weight. Most states levy a tax equal to a fixed percentage of market value.

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[45] Tobacco Tax Council, *Monthly State Cigarette Tax Report*, June 1977. Surprisingly, sales in Maryland were only 0.1 percent higher and those in Virginia were only 1.1 percent higher in 1976–77 than in 1975–76. This might indicate that the latest decrease in sales in the District was caused by a reduction in purchases by tourists or by long-distance cigarette smuggling.

[46] Advisory Commission on Intergovernmental Relations, "Cigarette Bootlegging: A State and Federal Responsibility," May 1977.

[47] Greene, Neenan, and Scott (p. 235) estimated that in fiscal 1970, 73.9 percent of cigarette purchases in the District of Columbia were made by District residents, 14.5 percent by Maryland residents, 8.4 percent by Virginia residents, and 3.2 percent by others. However, these estmates are of questionable relevance today: the tax rate in the District was 3–4 cents per pack in fiscal 1970; it is 13 cents per pack in 1977.

[48] Advisory Commission on Intergovernmental Relations, "State Taxation of Military Income and State Sales," July 1976.

[49] Registration fees are also imposed on motorcycles ($21), trucks and buses ($95–$479), trailers ($20–$431), and antique vehicles ($9).

In some states the sales or title tax is assessed on the value net of the value of any automobile traded in.[50]

The present system of graduation by weight in the District introduces discontinuities into the tax schedule. For example, if a purchaser of a $5,000 automobile weighing 3,950 pounds is considering addition of a 100-pound option which costs $100, the total tax would be $300 without the option and $357 with the option. In effect the tax rate on the option would be 57 percent. Anomalies such as this could be reduced by adopting a bracket system.

For example if:

x_1 equal proportion of total weight of car in 0–2800 pound range.

x_2 equal proportion of total weight of car in 2800–3500 pound range.

x_3 equal proportion of total weight of car in 3500–4000 pound range.

x_4 equal proportion of total weight of car in 4000+ pound range.

then the tax in percentage terms would be:

$$4x_1+5x_2+6x_3+7x_4$$

In this example the tax on the automobile without the option would be 4.405 percent, or $220.25; with the option it would be 4.457 percent, or $227.30. Thus, the effective tax rate on the option would be 7 percent. If a bracket system such as this were adopted, a table listing the percentage rate to be applied to market value at each weight level could be drawn up; weighted averages would not have to be calculated separately for each automobile.

2. Annual Registration Fee

Graduation of registration fees by weight is common to the District, Maryland, and Virginia, although the degree of graduation is greatest in the District. Many other states also graduate registration fees by weight; some levy flat rates; others base the fee on weight and age of the automobile; some base it on age only; others assess a fee as a percentage of market value; some consider both original price and age; and several Canadian provinces base registration fees on wheel base.[51] In short, there is a wide variety of fee schedules in use.

Graduation of registration fees by weight is based on the benefit principle of public finance. That is, heavier vehicles (including trucks and buses) impose greater burdens on the roads, both in terms of initial investment and annual maintenance costs, and should be taxed accordingly. But the diversity of fee schedules in use indicates either that the controversies about the specific relationship between weight and highway damage have not been settled, or that fee schedules are not explicitly based on studies of such relationships. Heavier automobiles are also generally less efficient in their use of fuel, so they also pay more gasoline taxes. An additional unsettled question is the appropriate division of total highway costs between direct users of highways and those who do not use the highways directly but benefit indirectly from the highway transportation system.

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[50] American Automobile Association, "Digest of Motor Laws," 1977.

[51] American Automobile Association, "Digest of Motor Laws," 1977.

Graduation by market value is based on the ability-to-pay principle of public finance. That is, individuals with high income levels tend to own more valuable automobiles. In this sense, the registration fee is equivalent to a personal property tax.

The rationale for graduation by an automobiles age is less clear. This may be a proxy for market value, but it clearly is not a very accurate proxy.

The economic effects of motor vehicle taxes differ depending on whom the taxes are imposed on: owners of private cars, truckers, taxicab owners and passengers, motorcyclists, public bus companies and riders, or owners and renters of rental cars. In table 11 we present tabulations of the number of registrations, by type of vehicle, for the period April 1975–March 1976. Unfortunately, the District Department of Transportation does not have data on total registration fees tabulated according to type of vehicle, though estimates might be made by combining the data in table 11 with the fee schedules in effect for this period.

TABLE 11.—*Number of Motor Vehicles Registered in the District of Columbia, April 1, 1975–March 31, 1976*

Paid vehicle registrations:	
Pleasure	226,387
Commercial	13,782
Hackers	8,257
Bus	5,171
Livery	289
Motorcycle	3,837
Trailers	2,273
Dealers	1,673
Transport	258
Antique	17
Total paid registrations	261,944
Free vehicle registrations:	
United States (federal government)	5,087
District of Columbia (government)	4,520
Diplomatic	3,617
Total free registrations	13,224
Net total vehicle registration (paid and free)	275,168
Registrations transferred	18,639
Gross vehicle registration	293,807

Source: District of Columbia Department of Transportation.

Automobile registration fees will be reduced by $15–$20 as of October 1, 1977. Current District rates are high by national standards, but, because 22 states authorize local imposition of a personal property tax on automobiles, comparisons of registration fees alone may be misleading.[52]

[52] Advisory Commission on Intergovernmental Relations, "Significant Features of Fiscal Federalism 1976–77," vol. 2, March 1977, pp. 132–3.

We have not attempted to measure the relevant price elasticities and interlocality sales effects associated with motor vehicle taxes. These taxes are determined by the owner's residence, rather than the location of sales, so interlocality effects may be minor.

There are, however, a large number of temporary residents of Washington. By law they are required to register their vehicles in the District at the end of the period allowed by the reciprocity agreement with their home state.[53] Enforcement of this law appears to be difficult, and high registration fees encourage such individuals to evade the law. The magnitude of this effect presumably depends on the relative registration fees in the District and in the resident's home state and the individual's degree of concern about abiding by the law. Thus, for this group there may be significant elasticity.

E. GASOLINE TAX

The gasoline tax is another case of application of the benefit principle of taxation. Graduation of registration fees by weight cannot adequately reflect wear and tear on the highways, because these fees do not take into account actual miles driven. On the other hand, the gasoline tax does not directly allow for differences in weight. Thus, a combined system of registration fees and gasoline taxes is generally considered necessary to take into account both factors.

As shown in table 12, the gasoline tax rate in the District exceeds the national median (and mode) of 8 cents per gallon. Only Connecticut has a higher state rate; the combined state and maximum local rates in Mississippi and Hawaii also exceed the rate in the District.[54, 55] With regard to rates in the Washington area, historically there have been three situations:

1. Identical rates in the District, Maryland and Virginia (1959–60, 1967–72).
2. A rate in the District lower than that in Maryland and/or Virginia (1961–66, 1973–75).
3. A rate in the District higher than those in Maryland and Virginia (November 1975 to date.)[56]

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[53] American Automobile Association, "Digest of Motor Laws," p. 32. Provisions in all states are discussed in this publication.

[54] In addition, seven states impose the retail sales tax on gasoline; see John F. Due, "State and Local Sales Taxation", 1971, p. 76. Due argues strongly that the sales tax should be imposed on gasoline, as "gasoline users should contribute also to general government revenues." Extension of the 5 percent sales tax to gasoline has been advocated in Maryland; see Montgomery Journal, August 11, 1977, p. A6.

[55] "Platt's Oilgram Price Service", August 29, 1977, listed average prices for regular full-service gasoline in 55 U.S. cities as of August 26, 1977. The U.S. average was 64.07 cents per gallon. Average price in the District was 66.9 cents per gallon; 48 cities had lower average prices, 5 cities (in the Midwest) had the same average price, and 1 city (Fargo, N.D.) had a higher average price.

Information on average gasoline prices and margins in the U.S. as of June 24, 1977 was contained in the Lundberg Letter, July 8, 1977. The average dealer buying price was 55.92 cents per gallon; average self-service selling price was 60.01 cents per gallon (margin of 4.09 cents per gallon), and average full-service selling price was 64.05 cents per gallon (margin of 8.13 cents per gallon). Specific data on average margins in the District and the suburbs are not available.

[56] Data as of January 1, from Advisory Commission on Intergovernmental Relations," "Significant Features of Fiscal Federalism 1976–77", vol. 2, March 1977, pp. 246–47.

TABLE 12.—*State gasoline tax rates, February 1977*

Tax rate (cents per gallon):	Number of States [1]
5 to 5.9	1
6 to 6.9	1
7 to 7.9	12
8 to 8.9	18
9 to 9.9	14
10 to 10.9	2
11 to 11.9	1
12 to 12.9	1
13 to 13.9	1

[1] State rate plus maximum local rate.

Source.—Tabulation based on data in "D.C. Tax Facts," February 1977, pp. 18–19.

The gasoline tax has been discussed favorably by one public finance expert:

> Of all the taxes that have ever been employed in the United States, the motor fuel tax probably comes nearest to being a popular tax. From the government's standpoint its first virtue is ease and inexpensiveness of administration. When rates were low this was particularly true. Even today the cost of administering gasoline taxes is probably lower than that of any other major state or local tax. Another advantage to the states is that the gasoline tax exacts contributions from out-of-state tourists in rough proportion to their use of highway facilities. Finally, the tax has proved to be a consistent producer of substantial revenue. Its yield can be depended upon in poor as well as in good years. From the taxpayer's standpoint, the tax is readily accepted as the price for good highway service.[57]

For the United States as a whole, the demand for gasoline is very inelastic, at least in the short run.[58] In the long run demand may be more elastic, as motorists buy more fuel-efficient automobiles. But even this is questionable: Dealers reportedly have had difficulty in selling smaller cars even with the sharp rise in gasoline prices since 1974. In addition, President Carter's proposed program of sharply higher gasoline taxes and the "gas-guzzler tax" is intended to reduce gasoline consumption by only 10 percent below the level which otherwise would be reached by 1985.

For the District, however, demand may be much more elastic. As for cigarettes and alcoholic beverages, District residents may purchase gasoline in the suburbs, and commuters presumably will purchase where price is lowest. Traditionally, most economists have believed that consumers are highly aware of and responsive to slight differences in gasoline prices. In recent years this awareness and responsiveness may have intensified, with the decline of nonprice competition in the form of trading stamps, glassware, and so on. However, a recent study pointed out that since the oil embargo of 1973–74, wide differentials in gasoline prices have existed between stations within close proximity to each other, apparently without serious effects on sales at the stations with higher prices.[59] The existence of wide ranges of prices within small regions has been confirmed by systematic surveys of gasoline prices.[60] The simple fact that such differences persist for

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[57] Harold Groves and Robert Bish, *Financing Government*, Seventh Edition, 1973, p. 245.

[58] One study estimated the national elasticity as −0.13; this was cited in Leonard Weiss, *Case Studies in American Industry*, 1967, p. 241.

[59] William S. Penn, Jr., and Harold Fox, "Puzzling Price Latitude at Service Stations," Business Economics 12(2): 12–16 (March 1977).

[60] Lundberg Letter, August 19, 1977. Penn and Fox (p. 13) quoted Dan Lundberg, President of Lundberg Surveys: "Differentials of as much as 10 cents per gallon, within a block or so are not unusual."

extended periods of time suggests either that consumer buying behavior may have changed (perhaps due to concern about future shortages, consumers wish to establish good will with certain stations), or that the traditional view of extreme price sensitivity may have been erroneous. This new possibility of relatively inelastic demand between stations suggests that a higher gasoline tax in the District might not seriously reduce sales. However, the empirical evidence to date is not strong enough to support this conclusion.

Apparently no formal econometric analysis of the price elasticity of demand in the District has been made. One state study did find an elasticity in the range of −0.7 to −1.1.[61]

If demand is elastic, this would suggest that the traditional view that excise taxes are fully shifted to consumers in the form of higher prices may not hold for gasoline (and, possibly, to a lesser extent for cigarettes and alcoholic beverages) in the District.[62] That is, if the tax rate in the District significantly exceeded the rates in Maryland and Virginia, service station owners would probably have to absorb some of the tax in the form of a lower net price. Some might be unable to do this and would be forced out of business.

In short, the price elasticity of demand for gasoline in the District is unknown. Estimation of this elasticity would appear to be an ideal candidate for econometric analysis. Traditional analysis would suggest a highly elastic demand, due to the possibility of purchases in the suburbs. The possibility of significant elasticity suggests that any major increase in the gasoline tax could lead to a significant decline in sales, and therefore might not bring in much additional revenue.[63] But the wider spread of prices in recent years suggests a lower degree of elasticity. If this is now true, the District's gasoline tax rate might be increased somewhat without serious impact on sales.

F. REVENUE FORECASTS

In table 13 we present data on revenues collected in fiscal year 1976 and the latest long-term revenue forecasts of the District Department of Finance and Revenue for alcoholic beverage taxes, the cigarette tax, motor vehicle titling tax and registration fees, and the gasoline

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[61] Lincoln Clark, "The Elasticity of Demand for Tennessee Gasoline," Journal of Marketing, April 1951, p. 407, as cited in Leonard Weiss, "Case Studies in American Industry", p. 241. Other earlier studies include Abdel Fawzy and James Martin, "Effects of Changes in Motor Fuel Tax Rates on Prices and Consumption of Gasoline," National Tax Journal 6(2):143–56 (June 1953); and Walton Wilford, "State Tax Stability Criteria and the Revenue Income Elasticity Coefficient Reconsidered," National Tax Journal 18(3):304–12 (September 1965) but neither of those appears to be relevant to the present situation in the District, with opportunity for interlocality purchases.

[62] The Lundberg Letter of August 5, 1977 reported the impacts on gasoline prices of recent tax increases in the State of Washington and in Portland (Multnomah County), Oregon. In Washington the tax increased by 2 cents per gallon on July 1, 1977; in all cases (self-service and full-service; regular, migrade and premium) the average price rose by 1.9 or 2.0 cents per gallon. The case of the local (county) tax increase in Portland would appear to be more relevant to the District's situation. The tax was increased by 1 cent per gallon as of January 1, 1977. For regular "mini-service" gasoline, the average price rose by 1.4 cents per gallon, suggesting some degree of tax pyramiding (margin widening); for all other cases, average price rose by 1.0 or 1.1 cents per gallon.

[63] In addition to the higher gasoline tax, service station owners in the District are subject to two other disadvantages in competing with stations in Maryland. Since May 1, 1977, stations in the District have been required to install vapor recovery nozzles, at an estimated cost of $140 per pump; in addition to the cost to the owner, some motorists at self-service stations may find these more awkward to use than regular nozzles. Further, the workmen's compensation rate is $10.44 per 100 of payroll cost in the District, but $3.10 per $100 of payroll cost in Maryland. I am indebted to Mr. Vic Rasheed, Executive Director, Greater Washington/Maryland Service Station Dealers Association, for this information.

tax for fiscal years 1977–83. The department makes projections for total sales-tax and use-tax revenue, but does not make a separate forecast of the transient accommodations portion of the sales tax. As indicated, the department projects annual declines of 2 percent in alcoholic beverages taxes and 3 percent in cigarette taxes. Motor vehicle taxes and fees and gasoline tax revenues are projected to remain at their fiscal 1977 levels. The department does not present the details of the method used; basically, the forecasts are extrapolations of recent trends and/or levels.

TABLE 13.—LONG-TERM REVENUE ESTIMATES, SELECTED EXCISE TAXES IN THE DISTRICT OF COLUMBIA, FISCAL YEARS 1977–83, AND ACTUAL REVENUE, FISCAL YEAR 1976

[Thousands of dollars]

Fiscal year	Alcoholic beverage taxes	Cigarette tax	Motor vehicle		Gasoline tax	Total
			Titling tax	Registration fees [1]		
1976 (actual)	11,509	9,842	11,507	14,826	21,545	69,224
1977	11,250	13,700	11,450	20,065	23,060	79,524
1978	11,030	13,290	11,450	16,174	23,060	75,004
1979	10,810	12,890	11,450	16,174	23,060	74,389
1980	10,600	12,500	11,450	16,174	23,060	73,784
1981	10,380	12,130	11,450	16,174	23,060	73,195
1982	10,170	11,770	11,450	16,174	23,060	72,624
1983	9,970	11,410	11,450	16,174	23,060	72,064

[1] Total revenue, of which 54 percent is paid into the highway fund, 46 percent into the general fund.

Source: Table 1 and District of Columbia Department of Finance and Revenue, Office of Fiscal Planning and Research, Apr. 6, 1977. For 1976, the fiscal year was July 1, 1975–June 30, 1976; for 1977 and later years, the fiscal year extends from Oct. 1 through Sept. 30. Data for the transition quarter (July 1, 1976–Sept. 30, 1976) are not shown.

We have not made separate revenue projections, but we believe that these projections are conservative. In general, the tax base expands as income grows and for fixed tax rates, tax revenue will also grow. For a specific or unit tax (such as those on cigarettes, alcoholic beverages, and gasoline) the following relation holds:

$$P_T = E_Q P_Y$$

where

P_T = percentage growth in tax revenue.
E_Q = elasticity of quantity purchased with respect to income.
P_Y = percentage growth in income.

For an ad valorem tax (such as that on transient accommodations) the corresponding relation is:

$$P_T = E_E P_Y$$

where

E_E=elasticity of total expenditure on goods with respect to income.

With this simple model, revenue forecasts can be made if estimates of E_Q and E_E and projections of P_Y are available. In table 14 we present historical data and projections for total personal income in the District.[64] These data may be used to obtain estimates of P_Y.

We urge that econometric analyses of time-series data be undertaken to estimate the relevant values of E_Q and E_E for the various taxes in the

[64] The projections in table 14 are based on national data and thus do not allow for differences in the growth of population and income per capita between the District and the nation as a whole.

District. Estimates from the cross-section data in Section III or from studies for various states could be used, but these are poor substitutes for estimates based on District time-series.[65]

TABLE 14.—*Total personal income, District of Columbia, 1967–76, and projections for 1977–82 (billions of dollars)*

Year:	Personal income	Year:	Personal income
1967	3.143	1975	5.522
1968	3.341	1976	6.069
1969	3.452	1977	6.735
1970	3.718	1978	7.495
1971	4.033	1979	8.360
1972	4.467	1980	9.256
1973	4.721	1981	10.125
1974	5.077	1982	11.004

Sources: For 1967–76, U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, various issues. Projections for 1977–82 are based on national projections of personal income in Executive Office of the President, Office of Management and Budget, "Mid-Session Review of the 1978 Budget", July 1, 1977, pp. 7, 55.

Such estimates, however, must take into account changes in the other determinants of demand listed above in this section; failure to do this would yield biased estimates of E_Q and E_E.

Formal evaluation of the forecasts in table 13 cannot be made in the absence of estimates of E_Q and E_E. But a priori it appears that E_Q and E_E are positive, in which case the forecasts are conservative. For planning purposes, however, conservatism in the estimating of revenue may be a virtue. Further, it appears that the excise tax bases in the District may not have increased as much as might have been expected from the growth of income in the District. And the unique position of the District, with a highly mobile population and the ease of interlocality sales, makes forecasting more difficult in the District than in the various states.

[65] Several studies of income elasticities are cited in Advisory Commission on Intergovernmental Relations. Significant Features of Fiscal Federalism", 1976–77, vol. 2, p. 254. Other relevant studies include H. M. Groves and C. H. Kahn, "The Stability of State and Local Tax Fields," American Economic Review, 42(1):87–102 (March 1952); Walton T. Wilford, "State Tax Stability Criteria and the Revenue-Income Elasticity Coefficient Reconsidered," National Tax Journal, 18(3):304–12 (September 1965); and David G. Davies, "The Secular Income Elasticity and Revenue Stability of Motor Fuel Taxes," National Tax Journal, 18(4):380–87 (December 1965).

Appendix

DERIVATION OF REVENUE PRODUCTIVITY FORMULAE IN SECTION IV

Let

P = price net of tax;
T = specific tax rate;
$P+T$ = price including tax;
$Q_s(P)$ = quantity supplied;
$Q_d(P+T)$ = quantity demanded;
Q = equilibrium quantity;
$R=TQ$ = tax revenue;

$$e_d = Q_d'\frac{P}{Q} = \text{elasticity of supply, where } Q_s' = \frac{dOs}{dP};$$

$$e_d = Q_d'\frac{P+T}{Q} = \text{elasticity of demand (negative), where } Q_d' = \frac{dQ_d}{d(P+T)};$$

dT = change in tax rate;
dR = change in tax revenue.

Then

$$\frac{dR}{dT} = Q + T\frac{dQ}{dT};$$

$$\frac{dR}{R} = \frac{Q+T\frac{dQ}{dT}}{R}dT = \frac{Q+T\frac{dQ}{dT}}{TQ}dT = \left(1+\frac{T}{Q}\frac{dQ}{dT}\right)\frac{dT}{T}.$$

Let

$$A = 1+\frac{T}{Q}\frac{dQ}{dT}.$$

Thus: percent change in $R = Ax$ percent change in T

To evaluate A:

$$Q = Q_s(P) = Q_d(P+T), \text{ so}$$

$$Q_s'\frac{dP}{dT} = Q_d'\left(\frac{dP}{dT}+1\right) \text{ or}$$

$$\frac{dP}{dT} = \frac{Q_d'}{Q_s'-Q_d'}.$$

Substituting

$$Q_d' = \frac{e_dQ}{P+T} \text{ and } Q_s' = \frac{e_sQ}{P} \text{ yields:}$$

$$\frac{dP}{dT} = \frac{e_dP}{e_s(P+T)-e_dP};$$

$$\frac{dQ}{dT} = Q_s'\frac{dP}{dT} = \frac{e_se_dQ}{e_s(P+T)-e_dP};$$

$$A = 1+\frac{e_se_dT}{c_s(P+T)-e_dP}.$$

The tax rate T^* which maximizes excise tax revenue may be found by setting A equal to zero and solving:

$$T^* = \frac{P(e_d - e_s)}{e_s(1+e_d)}$$

If demand is inelastic ($e_d > -1$), the tax rate may be increased indefinitely without leading to a decrease in tax revenue.

The formulae for A and T^* may be expressed as:

$$A = 1 + \frac{e_d T}{(P+T) - \frac{e_d}{e_s} P};$$

$$T^* = \frac{P\left(\frac{e_d}{e_s} - 1\right)}{1+e_d}.$$

If net price P is fixed (i.e., supply is infinitely elastic), all terms with e_s as divisor are zero, and the formulae for A and T^* simplify to:

$$A = 1 + \frac{T}{P+T} e_d$$

$$T^* = -\frac{P}{1+e_d}$$

To consider an example, if this case holds for cigarettes and $T = 13¢$, $P + T = 52¢$,[1] so $P = 35¢$; if $e_d = -3.0$ (a highly elastic demand), then:

$$T^* = -\frac{P}{1+e_d} = 19.5¢$$

That is, in this hypothetical example increasing the cigarette tax rate beyond 19.5 cents per pack would actually reduce cigarette tax revenue. (If demand is less elastic, the revenue-maximizing tax rate would exceed 19.5 cents per pack in this model.)

Results similar to the above may also be derived for ad valorem excise taxes.

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[1] The average price of cigarettes in the District as of November 1, 1976, was 51.9 cents per pack, as reported in Tobacco Tax Council, "The Tax Burden on Tobacco", 1976, p. 71.

TAXATION OF INSURANCE COMPANIES IN THE DISTRICT OF COLUMBIA

(By Carol S. Meyers, The D.C. Department of Finance and Revenue, Washington, D.C.)

I. A Brief Overview of the Insurance Business

The business of insurance in the United States is divided into three broad categories: life insurance, health insurance and property and liability insurance. Altogether it provides about 1.7 million jobs and has responsibility for assets of more than $350 billion. The more important role of the insurance industry is the absorption of business and personal risks.

Life and other insurance based on long-term contracts (such as noncancellable health contracts) differs substantially from other forms of insurance. To meet long-term obligations life insurance companies must set aside sufficient reserves in the form of long-term assets. The necessary amount of reserves is calculated on an actuarial basis, taking into account the funds forthcoming from future premium payments, expected interest earnings, and expected mortality experience. The required reserves will vary, however, depending on the type of policy; group policies carry lower reserves, for example.

Pricing practices also differ for life-insurance companies in that a given individual, small-group or 1-year term policy will tend to be sold anywhere in the Nation at the same price. A large group policy, however, will tend to be rated on its own experience. Shorter-term property and liability policies are usually priced on a regional basis. Thus when the costs of writing nonexperience-rated life insurance in a given region increase, the associated profits decline, and the life companies tend to both reduce their marketing efforts in that area, and distribute some of the increased costs across the country in higher prices for new policies. One result may be that within a given region customers may be faced with a more limited range of nonexperience-rated policies.

Rather than reducing marketing efforts, companies writing shorter term and experience-rated policies in an insurance region such as the District of Columbia will add any increased costs to the premiums as policies come up for renewal. This pricing policy, however, does not mean that 100 percent of any cost or tax increase is ultimately borne by the customer. Prices and tax incidence cannot be determined unilaterally by the insurance industry in isolation from demand factors.

The insurance industry is organized into stock companies which are owned by stockholders and mutual companies which are owned by policyholders. As a rule, mutual companies sell participating insurance, and stock companies, nonparticipating (guaranteed cost) insurance.

The industry is also divided according to the general type of insurance offered. Life insurance companies sell four major kinds of life insurance (ordinary, group, industrial, and credit) as well as individual and group annuity and accident and health policies. Property and casualty insurance companies sell hundreds of forms of financial protection against almost every known peril. The major categories of insurance lines are: automobile liability and physical damage, commercial and homeowners multiple peril, fire and related lines, accident and health, workmen's compensation, marine, and surety and fidelity.

To protect their residents and businesses who purchase policies the District of Columbia and the States regulate and supervise the insurance companies. Although State laws vary, their primary object is to assure adequate liquidity or policy reserves for meeting claims. This is accomplished by setting and enforcing restrictions on investment portfolios. Insofar as these restrictions limit profit, they act as an implicit tax. Insurance companies are also supervised and assisted with regard to the manner of dealing with their customers, such as the conditions of policy sales, handling of claims, et cetera.

The insurance industry in the District of Columbia is fairly small. In 1975 the industry accounted for $87 million or 1 percent of total labor and proprietors' income earned within the city. Over the previous 9 years labor and proprietors' income from this source had grown 50 percent, in contrast with the 95-percent growth in the total of such income. Thus the industry's relative contribution to the District economy in terms of these earnings has been declining. Since the insurance industry provides important financial protection to persons and businesses and is a significant provider of investment capital, especially to real estate, its total contribution to the city's economy is greater than represented by these direct earnings.

As indicated by charts 1 and 2, most of the risk-underwriting in the District is done by a relatively few firms. In 1975 about 20 percent of the 312 life companies had taxable District premiums in excess of $500,000 (or paid premiums taxes in amounts greater than $10,000). The ratio also held for the 326 property and casualty companies receiving premiums income from District plans to 1975.

CHART 1

Numbers of domestic and foreign life insurance companies licensed in the District of Columbia by size of tax paid by Mar. 1, 1976

Tax paid:	*Number of companies*
0	23
$1 to $100	40
$101 to $500	62
$501 to $1,000	29
$1,001 to $2,000	38
$2,001 to $5,000	39
$5,001 to $10,000	41
$10,001 to $50,000	44
$50,001 to $100,000	8
$100,001 to $200,000	6
$200,001 and over	5
Total	335

CHART 2

Numbers of domestic and foreign property and casualty companies licensed in the District of Columbia by size of tax paid by Mar. 1, 1976

Tax paid:	*Number of companies*
0	113
$1 to $100	57
$101 to $500	61
$501 to $1,000	30
$1,001 to $2,000	31
$2,001 to $5,000	48
$5,001 to $10,000	33
$10,001 to $50,000	48
$50,001 to $100,000	8
$100,001 to $200,000	6
$200,001 and over	4
Total	439

Compared to the District statistics, the insurance industry nationwide has grown considerably faster and has constituted a larger portion of the national economy. In 1966 its relative share of total labor and proprietors' income was 1.9 percent, and, in 1975, 2 percent. The growth in this income was 110 percent over this 9-year period.

The District's share of the national insurance industry is quite small and has been declining. In 1975 only 0.46 percent of national labor and proprietors' income attributable to insurance carriers, brokers, and agents came from District sources. This represented a decline of 28 percent since 1966. During 1975 life-insurance companies received from District policies 0.47 percent of their nationwide life-insurance premiums, 0.17 percent of their annuity considerations, and 0.48 percent of their health-insurance premiums. Property and casualty insurance premium receipts from District sources also comprised a small portion of national receipts. However, in per capita terms, life-insurance companies received $340 from District policies in 1975 compared with $275 per capita for the Nation.

Insurance companies doing business within a jurisdiction are characterized as domestic companies, or those incorporated under the laws of that jurisdiction, foreign companies, or those incorporated elsewhere in the United States, or alien companies. Charts 3 and 4 show the domestic companies and their relative market shares. The foreign company categories include alien companies. Domestic life-insurance companies received only about 1.7 percent of total premiums received in the District during calendar year 1975. The 1975 market share for domestic property and casualty and casualty companies was 13 percent. As discussed below, these relatively small market shares affect tax policy options available to the District.

CHART 3.—DOMESTIC AND FOREIGN PROPERTY AND CASUALTY COMPANIES IN THE DISTRICT OF COLUMBIA 1975 GROSS AND TAXABLE PREMIUMS AND TAX PAID BY MAR. 1, 1976

Domestic companies	Fire and allied		Commercial multiperil		Malpractice		Accident and health		Workman's compensation	
	Gross	Taxable	Gross	Taxable	Gross	Taxable	Gross	Taxable	Gross	Taxable
Columbia Real Estate Title Insurance Co.										
Abbey Casualty Insurance Co. of D.C.										
Amalgamated Casualty Insurance Co.										
American Home Owner Insurance Co.										
Bankers Mutual Insurance Co.	$96, 431	$96, 431					$83, 747	$83, 747		
Columbia Mutual Insurance Co.										
Criterion Insurance Co.										
Firemen's Insurance Co. of Washington, D.C.	918, 009	918, 009								
Government Employees Insurance Co.	91, 957	91, 957								
Guardian Insurance Co.										
Hamilton Insurance Co.	251, 996	251, 996								
Home Casualty & Surety Co.	4, 385	4, 385								
Tri-State Insurance Co.										
Total	1, 362, 778	1, 362, 778					83, 747	83, 747		
Foreign companies	7, 610, 737	7, 575, 066	$14, 284, 087	$14, 231, 442	$8, 435, 589	$8, 435, 589	19, 862, 579	19, 861, 887	$46, 590, 948	$45, 406, 746
Grand total, domestic and foreign companies	8, 973, 515	8, 937, 844	14, 284, 087	14, 231, 442	8, 435, 589	8, 435, 589	19, 946, 326	19, 945, 634	46, 590, 948	45, 406, 746

	Auto		Fidelity and surety		Title		All other		Total		
	Gross	Taxable	Gross	Taxable	Gross	Taxable	Gross	Taxable	Gross	Taxabje	Tax
Columbia Real Estate Title Insurance Co.					$305, 127	$305, 127			$305, 127	$305, 127	$6, 103
Abbey Casualty Insurance Co. of the District of Columbia	$422, 928	$422, 928							422, 928	422, 928	8, 459
Amalgamated Casualty Insurance Co.	1, 316, 653	1, 316, 653							1, 316, 653	1, 316, 653	26, 333
American Home Owner Insurance Co.	307, 468	307, 468							307, 468	307, 468	6, 149
Bankers Mutual Insurance Co.	674, 545	674, 545					$67, 842	$67, 842	922, 575	922, 575	18, 451
Columbia Mutual Insurance Co.	570, 142	570, 142							570, 142	570, 142	11, 403
Criterion Insurance Co.	2, 485, 643	2, 485, 643					26, 860	26, 860	2, 512, 503	2, 512, 503	50, 250
Firemen's Insurance Co. of Washington, D.C.	20, 637	20, 637					363, 629	363, 629	1, 302, 275	1, 302, 275	26, 046
Government Employees Insurance Co.	17, 603, 231	17, 603, 231					1, 164, 574	1, 164, 574	18, 859, 762	18, 859, 762	377, 195
Guardian Insurance Co.	49, 740	49, 740							49, 740	49, 740	995
Hamilton Insurance Co.	690, 912	690, 912							942, 908	942, 908	18, 858
Home Casualty & Surety Co.	7, 556	7, 556							11, 941	11, 941	239
Tri-State Insurance Co.	57	57							57	57	1
Total	24, 149, 512	24, 149, 512			305, 127	305, 127	1, 622, 905	1, 622, 905	27, 524, 079	27, 524, 079	550, 482
Foreign companies	30, 679, 741	30, 478, 361	$9, 710, 814	$9, 710, 899	1, 585, 666	1, 585, 666	41, 751, 416	41, 554, 584	[1] 182, 398, 009	[1] 180, 678, 823	[1] 3, 613, 578
Grand total, domestic and foreign companies	54, 847, 253	54, 627, 873	9, 710, 814	9, 710, 899	1, 890, 793	1, 890, 793	43, 374, 321	43, 177, 489	[1] 209, 922, 088	[1] 208, 202, 902	[1] 4, 164, 060

[1] Includes for 9 companies reporting totals only: Gross premiums, $1,768,819; taxable premiums, $1,768,729; tax, $35,377.

CHART 4.—DOMESTIC AND FOREIGN LIFE INSURANCE COMPANIES IN THE DISTRICT OF COLUMBIA—1975 GROSS AND TAXABLE PREMIUMS AND TAX PAID BY MAR. 1, 1976

	Life insurance premiums		Annuity premiums		Health and accident premiums		Total premiums		Premiums paid for 1975 tax year
	Gross	Taxable	Gross	Taxable	Gross	Taxable	Gross	Taxable	
Domestic companies:									
AAA Life Insurance Co					$20,604	$20,604	$20,604	$20,604	$412
Acacia Mutual Life Insurance Co	$703,507	$577,281	$50,786	$13,824	6,429	6,429	760,721	597,534	11,951
American Capital Life Insurance Co	117,248	117,248	718	718			117,966	117,966	2,359
American Citizens Life Insurance Co	243,769	243,769			41,937	41,937	285,706	285,706	5,714
General Services Life Insurance Co	40,049	39,892					40,049	39,892	798
Government Employees Life Insurance Co	711,800	711,800			243,143	243,143	954,943	954,943	19,099
Mutual Life Insurance Co. of Washington, D.C	622,471	615,591			260,373	260,373	882,844	875,965	17,519
Peoples Life Insurance Co. of Washington, D.C	862,989	862,989	38,334	38,334	42,016	42,016	943,339	943,339	18,867
United Services Life Insurance Co	116,907	107,784					116,907	107,784	2,156
Washington Life Insurance Co									
Total, domestic companies	3,418,739	3,276,355	89,838	52,876	614,503	614,503	4,123,080	3,943,733	78,875
Foreign companies, total	133,637,690	122,233,951	16,838,039	15,024,294	90,234,997	89,277,996	[1] 243,291,439	[1] 229,116,885	[1] 4,582,329
Grand total, domestic and foreign companies	137,056,429	125,510,306	16,927,877	15,077,170	90,849,500	89,982 499	[1] 247,414,519	[1] 233,060,618	[1] 4,661,204

[1] Includes 1 company reporting totals only: gross and taxable premiums, $2,570,382, and tax, $51,408.

Another important relationship is the amount of business conducted by a domestic company in the District relative to its total underwriting business. Understandably, the largest domestic companies receive a small proportion of the total premiums from District policies, less than 5 percent. Only one domestic life company draws almost all of its premium income from the District, but six domestic casualty companies concentrate more than 70 percent of their underwriting business here.

II. Taxation of Insurance Companies in the District of Columbia

A. TAXES PAID BY INSURANCE COMPANIES

Licensed insurance companies selling insurance in the District are subject to the 2 percent premiums tax. If these companies own real property here, they are subject to the real estate tax. Those insurance companies which have no premium income from District policies in a given year but which have a place of business in the District and income from loans to District policyholders or loans secured by a mortgage on District real estate are subject to the corporation franchise tax. The 2 percent premiums tax is also imposed on surplus line brokers licensed to do business in the District for insurance companies not authorized to do business here. In addition, insurance companies pay an annual fee of $25 for their certificate of authority, a $20 annual statement filing fee, and the annual license fees for their agents, $50 for life insurance agents and $25 for property and casualty agents.

B. ROLE OF THE INSURANCE PREMIUMS TAX IN D.C. FINANCE

An insurance premiums tax of 1½ percent was first enacted in the District on June 30, 1902. At that time, the taxes on banks, savings and loan associations, and utilities were also enacted.

The tax rate was increased to the present rate of 2 percent on August 17, 1937. A year later, May 16, 1938, considerations paid to insurance companies for annuity contracts were added to the tax base. The Revenue Act of 1978, enacted by the D.C. City Council on April 7, 1977, established the quarterly payment of the premiums tax for companies with annual tax liability over $2,000. Although the tax had previously been paid in a lump sum by March 1 on the premiums of the immediately preceding calendar year, it now must be paid on a current basis in four installments. The first three installments must each equal at least 25 percent of the prior year's liability and be paid by May 1, July 1, and September 1. The fourth and final installment plus any reconciliation are due with the final return to be filed by March of the following year.

The insurance tax has played a relatively minor role in District finance. As shown by chart 5, until fiscal year 1977 collections from this tax had not exceeded 1.4 percent of own-source revenues since 1964. The recent payment schedule change increased the percentage contribution to 2.1 percent in fiscal year 1977, but eliminating the estimated windfall of $7.65 million reduces the share to 1.2 percent of own-source revenues, or $10.4 million. From fiscal year 1964 through fiscal year 1976 insurance tax revenues grew at an average annual compound rate of 7.98 percent. Over the last fiscal year these revenues increased

16.4 percent, reflecting, among other factors, substantial increases in policy premiums. The growth in premium income, hence insurance tax revenues, is forecast at a lower, 7 percent compound average annual rate of growth for the next 5 years. Since the expected average annual increase in own-source revenues is somewhat less than 6 percent over this same period, the relative contribution of the insurance tax should reach 1.43 percent in fiscal year 1983.

CHART 5.—ACTUAL AND ESTIMATED DISTRICT OF COLUMBIA INSURANCE PREMIUM TAX REVENUE FISCAL YEARS 1964–83

[In thousands of dollars]

	Revenue	Percent of District of Columbia own source revenue
Fiscal year:		
1964	$3,552	1.42
1965	3,803	1.42
1966	3,947	1.35
1967	4,187	1.34
1968	4,450	1.29
1969	4,739	1.23
1970	5,339	1.22
1971	5,851	1.20
1972	6,650	1.13
1973	7,333	1.30
1974	7,796	1.19
1975	8,510	1.38
1976	8,917	1.28
Transition quarter	21	(1)
1977	[2] 18,031	2.14
1978, estimate	[3] 11,630	1.26
1979, estimate	12,440	1.32
1980, estimate	13,310	1.37
1981, estimate	14,250	1.39
1982, estimate	15,240	1.41
1983, estimate	16,310	1.43

[1] Not available.
[2] Includes an estimated $7,650,000 from change to quarterly payment schedule.
[3] Includes $500,000 from change to quarterly payment schedule.

Over the period from 1963 through 1975, the elasticity of the insurance tax yield with respect to nominal District personal income was 1.35. For a more recent period, 1969 through 1975, the income elasticity coefficient was 1.20 using nominal personal income.

C. THE D.C. INSURANCE PREMIUMS TAX

The District of Columbia premiums tax on insurance is based on a company's net premium receipts or considerations received in the District. These net premiums and considerations are gross amounts received as consideration for insurance and annuity contracts, including assessments and policy and membership fees, on risks in the District, less the sum of the following:

One. Premiums received for reinsurance assumed.

Two. Premiums or consideration returned to customers on policies or contracts canceled or not taken.

Three. Dividends paid in cash or used by policyholders in payment of renewal premiums.

1. Deductions

From the standpoint of allowable deductions or subtractions from gross premiums the District's insurance premiums tax resembles most

other States laws (see chart 7). In 1975 total deductions amounted to $16.1 million or 3.5 percent of gross premiums from District insurance policies. Many life-insurance companies are mutual organizations and issue dividends to their policyholder members when there is a year-end surplus, and most of the total deductions, $14.4 million (5.8 percent of District gross life premiums), are attributable to these life companies. These dividends are legal overages and are similar to refunds.[1] Stock companies also may issue dividends on their participating policies. Dividends are the most important deduction for life companies as is documented by the experience of the District's domestic life companies. In 1975, dividends accounted for 12.8 percent of their total (nationwide) gross premiums. Domestic casualty companies paid only 0.05 percent of their 1975 gross premiums in policyholder's dividends.

Under District (and most State) law taxable premiums relate to the insurance actually written by a specific company. Thus insurance written by company *X* and ceded to company *Y* is part of taxable premiums for company *X*. To avoid double taxation the premiums on company *Y*'s assumed insurance must be deducted from *Y*'s gross premiums. In the aggregate this reinsurance assumed is typically a less important deduction than dividends. For any one company, however, reinsurance assumed or ceded can constitute a large portion of gross premiums.

The third item of deductions, refunded premiums, usually accounts for a very small share of gross premiums.

2. Allocation of taxable premiums

Each insurance company filing a tax return with the Superintendent of Insurance must allocate the proper shares of its total gross premiums and annuity considerations and deductions to the District, the States, territories and foreign countries. Although a company must use the same allocation procedure in all jurisdictions, the formula used is determined by custom rather than law, regulations or association guidelines. Generally, insurance companies use the residence of the insured person or the situs or depot of the property as the basis for allocation. Some lines of insurance have traditionally been associated with other allocation practices.

In contrast with taxes on other business income there are a few allocation problems associated with the insurance premiums tax. One of the few troublesome issues about allocation is, however, the assignment of premium income on group life and health and accident policies written for employees of large interstate companies. Sometimes an insurance company will designate the State where the headquarters are located as the situs of the insured. Problems of this nature tend to benefit the District since it is both the largest employment center of a metropolitan region and the location of several interstate private company headquarters. The more customary practice, however, is for insurance companies to designate the employee's residence as the site of the risk for groups of more than 500 employees.

[1] Some believe, however, that these dividends also include investment and underwriting earnings of the mutual company since, here, the policyholder is both the owner of the company and the purchaser of its services.

3. Exemptions and loopholes

Like many States the District is prevented by statute from applying its premiums taxes to considerations paid under protection plans offered by Blue Cross and Blue Shield, health maintenance organizations and other groups offering prepaid assistance, fraternal beneficiary societies, and self-insured plans. Although it is difficult to estimate the combined cost of all of these exemptions, it is probably quite high. To a large extent these nontaxed plans and organizations compete with insurance companies, raising the question of horizontal tax equity. In the past, the nontaxable status of some of these organizations has been established by Federal law and/or upheld by court decisions. Yet the equity issues remain, and some of the circumstances on which the exemptions were based may have changed enough to warrant a review of the issues.

A. Blue Cross and Blue Shield.—Group Hospitalization, Inc. (later to become the organization in the Washington area offering the Blue Cross plan) began in 1933 as a nonprofit organization offering conditional contracts of hospital service at participating hospitals to groups of employees or subscribers.

At the time of incorporation the D.C. Corporation Counsel and the Superintendent of Insurance did not consider the Group Hospitalization plan insurance [2] and thus subject to regulation and taxation by the District. In 1935, a new Superintendent of Insurance informed GHI that he considered the plan to be insurance and GHI an insurance agency rather than a civic agency.[3] No more was done until 1937 when the Superintendent declared once again that GHI was offering insurance and must organize into a stock or mutual insurance company [4] and comply with all the D.C. insurance regulations. Rather than pursue these courses GHI sought and obtained on August 11, 1939 [5] a Federal charter to assure its protection from most District regulation and taxation and its continued nonprofit status. Section 8 of this charter exempts GHI from all District taxes but the real-estate tax. Although section 7 exempts GHI from insurance regulations, section 5 requires an annual statement to be filed with the Superintendent of Insurance disclosing GHI's operations and financial position. This section further requires the Superintendent to institute proceedings to enjoin GHI from noncompliance with its Federal charter.

The Medical Service of the District of Columbia or "Blue Shield" began operations in 1948 to offer on a nonprofit basis to its subscribers conditional contracts for major medical services to be provided by participating physicians. GHI promotes, markets and administers this Blue Shield plan under contract. Because such medical services are considered an essential aspect of the hospitalization provided by GHI for its subscribers, the Corporation Counsel, in an opinion dated July 22, 1954,[6] ruled that the statutory exemptions applicable to GHI also apply to Blue Shield.

A March 25, 1977 Corporation Counsel opinion stated that the Congress obviously left open the legislative option to eliminate the exempt status given GHI. This opinion refers specifically to section 10 of the

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[2] E. J. Henryson, *My Story of Group Hospitalization, Inc.*, Group Hospitalization, Inc. (Washington, D.C., 1970) p. 14.
[3] *Ibid.*, p. 48.
[4] *Ibid.*
[5] Public law 76–395, 53 Stat. 1412.
[6] CCO No. 610.1, Medical Service of the District of Columbia.

Public Law 76–395 which states that the charter "may be altered, amended or repealed at the pleasure of the Congress * * *". Corporation Counsel further opined that since Title VI of the Self-Government Act limiting D.C. Council city authority does not relate to this issue of Blue Cross-Blue Shield regualtions, "the Council is empowered under its legislative authority to enact measures regulating the operations of Blue Cross and Blue Shield, as well as other health maintenance organizations." [7] Finally, Counsel states that this authority extends to the amendment or repeal of the tax exemptions granted in Public Law 76–395.

CHART 6.—PREMIUM TAXES AND FEES ON BLUE CROSS-BLUE SHIELD ORGANIZATIONS, JUNE 1973

	Tax rate (percent)	
	Blue Cross	Blue Shield
Alabama	2	
Alaska	[1] 6	[1] 6
Arizona	1	1
Arkansas	1	1
California	([2])	
Colorado		
Connecticut	2	2
Delaware		
District of Columbia		
Florida	([3])	([3])
Georgia	2.25	2.25
Hawaii		
Idaho	([4])	([4])
Illinois		
Indiana	1	1
Iowa		
Kansas	1	[5] 1
Kentucky		
Louisiana	([6])	([6])
Maine		
Maryland		
Massachusetts		
Michigan		
Minnesota		
Mississippi	1.5	1.5
Missouri		
Montana		
Nebraska	.6	.6
Nevada	2	2
New Hampshire		
New Jersey		
New Mexico	2.5	2.5
New York		
North Carolina	.33	.333
North Dakota		
Ohio	([7])	
Oklahoma		
Oregon		
Pennsylvania		
Rhode Island		
South Carolina	2	2
South Dakota	[8] 2.5	.5
Tennessee	1.75	1.75
Texas	1.1	1.1
Utah	2.25	2.25
Vermont		
Virginia	.1	.1
Washington		
West Virginia		
Wisconsin		
Wyoming	1.5	1.5

[1] Based on gross premiums less claims.
[2] Hospitalization plans pay annual fees not to exceed 6¢ per family unit or contract
[3] Blue Cross and Blue Shield pay an annual license fee of $200.
[4] Blue Cross and Blue Shield pay 1¢ per month for each subscriber contract.
[5] Blue Shield pays annual fee of $250.
[6] Blue Cross and Blue Shield pay annual fee of $250.
[7] Blue Cross pays 1¢ per contract or certificate issued.
[8] Blue Cross is an Iowa corporation.

Source: American Council of Life Insurance.

[7] CCO No. 1047, March 25, 1977, p. 3.

According to a 1973 survey (see chart 6), 19 States then taxed Blue Cross-Blue Shield insurance business on the basis of gross premiums or subscriptions. The tax rates ranged from 0.1 percent in Virginia to 2.5 percent in New Mexico. Alaska taxed both Blues on the basis of gross subscriptions less claims. California and Idaho had a fee for each contract based on 6 cents annually and 1 cent monthly, respectively. The remaining three States which required some payment from the Blues charged only nominal annual license fees. Although some of the fees and tax rates may have changed in the last 4 years, it is clear that assessing the Blue Cross-Blue Shield organizations is fairly common practice, at least in the South and West.

If the District were to apply its 2 percent premiums tax to Blue Cross-Blue Shield District subscription income, the annual revenue yield would probably range from a low of $1.9 million to a high of $2.3 million. The lower estimate assumes subscription income would be allocated only by employee residential address, and the higher estimate assumes a partial allocation by employer address. At either level Medical Services of D.C. would pay over half of the tax.

A tax exemption for Blue Cross-Blue Shield organizations is usually justified on the grounds of their charitable purpose and nonprofit status. Forty years ago hospital and medical services insurance was not commonly available. Many employees and their families either avoided necessary but costly treatment or paid their medical bills with difficulty. if at all. By establishing themselves as self-help organizations and spreading the risks of medical care costs over all subscribers based on the experience of the entire community the Blues were considered to be fulfilling an important charitable or social purpose. Consequenlty, there was much sentiment against taxing them.

In addition, the nonprofit status and particular organization of the Blues are often cited as chief reasons for tax exemption or, at least, preferential treatment. Expanding on this view, proponents further argue that since the States set the rates charged in the Blues' plans, almost all of the subscription income is paid out in claims. They also posit that because a far greater portion of the Blues' total income is from subscriptions or premiums, special tax treatment is warranted.

The final argument in favor of a continued premiums tax exemption for Blue Cross-Blue Shield organizations is the likely increased cost of medical care insurance for their many subscribers that would ensue.

Opponents of this tax exemption counter the first argument by pointing out that conditions surrounding the original exemption have changed considerably. Now hospital and medical service insurance plans are commonly available through private insurance companies. Hence the charitable nature of the services offered by the Blues has virtually disappeared, if it ever existed at all. Hospitals participate in order to increase business and secure reimbursement for services rendered. Individuals subscribe not as recipients of charity but as consumers exercising their preference for the convenience and the packages of services at the prices offered by the Blues. Furthermore, the community-rating procedure used by these exempt organizations has given way to experience-rating their large group plans. a common insurance company practice. Organizationally, the Blues resemble

mutual insurance companies in that their subscribers are akin to mutual company policyholders.

With regard to the nonprofit argument, there is little difference between the payout or loss ratio for group Blue Cross plans and private group health plans which are comparable in terms of premiums, reserves, underwriting rules, and coverages. Typically the Blue Cross group plans return around 93 percent of their earned premiums as benefits, and Blue Shield plans return about 90.5 percent. Although precise comparisons are impossible, similar private company plans pay out about 90.5 percent and must also pay premiums taxes of 2 to 3 percent. Comparisons of payout ratios are not possible in the individual contract area, but the insurance companies do incur considerably higher administrative and acquisition costs (including commissions and brokerage) than do the Blues. Although a far greater portion of Blue Cross-Blue Shield total income is from subscriptions, the differences are illusory. In 1975, for example, other income constituted only 0.5 percent of GHI's total income.[8] Nonpremium income accounted for 25 percent of U.S. life companies' 1975 total income.[9] The difference, however, is actually a function of the difference between the accident and health insurance business and the life insurance business; life insurance is long term, and long-term, interest-bearing investments are required for reserves.

Nevertheless, for whatever reason, the ratio of premiums to total income and the ratio of premiums to net income are higher for the Blues than for profitmaking insurance companies. Insofar as net income is deemed the appropriate measure of taxable or economic capacity for all entities offering insurance-like services taxing the Blues at the same rate as applied to the insurance companies' premiums would tend to treat the Blues somewhat unfairly. This logic may have led a few States to tax nonprofit health plans at lower rates. However, most of the States which levy a premiums tax on Blue Cross-Blue Shield business do so at the same rates applicable to life companies. Indeed the trend is toward the elimination of the preferential treatment first granted by the States 35–40 years ago. Apparently, many States have come to recognize that the gross premiums tax is no less unfair to an insurance company with negative net income than it is to a Blue Cross or Blue Shield organization with a high premiums-to-net-income ratio. Equally important is the fact that the industry has changed substantially over the last 4 decades and the Blues are now direct competitors of insurance companies which must pay the premiums tax.

In summary, although the cost of medical-care insurance would increase for many District residents if the exemption is removed, these residents would bear only the same tax costs as their neighbors who are insured under private health plans. Eliminating the premiums tax exemption for Group Hospitalization, Inc., and the Medical Services of D.C., would improve horizontal tax equity significantly.

In addition to taxing the Blues at the 2-percent rate, there are other ways to improve tax equity. One would be to exempt all hospital and

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[8] "Summary of Operations 1975". *A Report From Group Hospitalization, Inc.*, Group Hospitalization, Inc. (Washington, D.C., 1976).

[9] Life Insurance Fact Book, 1976, American Council of Life Insurance (New York, 1976) p. 54.

medical insurance plans from the premiums tax or tax all plans at the same preferential rate. This would allow equal treatment of the Blue Cross-Blue Shield competitors and would reduce the cost of health care to District citizens. The cost to the District of the blanket exemption would be the continued tax expenditure associated with the Blues' exemption plus another $2.2 million in actual annual insurance tax revenues. The remaining way to improve tax equity would be to impose a 1-percent tax on all hospital and medical insurance plans. This approach would not change District revenues.

B. Prepaid health care and legal assistance plans.—Another form of health insurance increasingly popular in the United States is made available through health-maintenance organizations. With 101,800 members, 44,800 of whom are District residents, the Group Health Association is the primary organization here offering prepaid medical service and hospitalization plans. The 1976 total membership dues were $32.3 million and the prorata District portion, $14.2 million.

On February 24, 1937, Group Health was incorporated as a nonprofit relief association. In return for monthly dues it arranges for medical and surgical services for its members to be rendered by independent practitioners. Shortly after its incorporation the Superintendent of Insurance contended that Group Health was either a health or accident insurance company or a company engaged in such business and thus was subject to the laws concerning the regulation and taxation of insurance companies in the District. On September 11, 1939, the U.S. Court of Appeals for the District of Columbia decided against the District.[10] In the court's opinion, such as association as Group Health was not within the purview of the District's insurance laws because inter alia the association was not liable to its members for the failure of the physicians to render adequate medical service. Group Health issued no policies or contracts to its members and, according to the court, the contracts between Group Health and the physicians were more analogous to a collective labor agreement in the individual contract of the union member and the employer than to the ordinary contract of a principal made by his agent. In essence, Group Health was seen as making health services available as a consumer cooperative and not as assuming the risk involved in guaranteed provision of adequate health services. If anyone assumed risk, the court opined, it was the physician who received only his salaried compensation regardless of workload.

The nature of Group Health has remained the same since 1939. Yet the question of horizontal tax equity remains. The associated practitioners may be providing insurance-like services, but they are salaried and thus pay no business taxes to the District. They do not pay the insurance tax, nor, unlike their peers in private practice, do they pay the unincorporated business franchise tax. If they are residents, they are liable for the individual income tax. However, just what portion of their compensation constitutes quasi-insurance premiums is not considered here.

Another trend of the future appears to be prepaid legal assistance. Although it is not impossible to determine the extent of its use, the advertising campaigns may indicate an increasing demand. Appar-

[10] Jordan, Superintendent of Insurance v. Group Health Association, No. 7260.

ently these legal assistance plans operate like the prepaid health plans; little or no risk assumption by the association and available, but nonguaranteed, assistance from contract-lawyers. One such plan has been endorsed and sponsored by the D.C. Employees Federal Credit Union to be paid for by payroll deduction.[11] Yet the nonresident salaried lawyers are apparently able to avoid District taxation. The tax inequities involved in this particular arrangement and others like it should be studied further.

C. Fraternal beneficial societies.—Fraternal beneficial societies issue life and health and accident insurance policies to their members and are typically exempt from State insurance taxes. These societies are usually affiliated with religious, ethnic, or occupational groups. In 1975 the total payments received from members in the District of Columbia were $2,132,102. Three of the 37 fraternal orders providing insurance in the District are domestic associations: The D.C. Hebrew Beneficial Association, Electrical Workers Benefit Association, and The Hungarian Reformed Federation of America. The largest "seller" in 1975 was the Electrical Workers Benefit Association with $1,025,824 in payments from District members. Other large "sellers" include: The U.S. Letter Carriers Mutual Benefit Association under a Federal and D.C. Employees contract ($317,565), The Aid Association for Lutherans ($51,574), The Hungarian Reformed Federation of America ($58,829), and The Lutheran Brotherhood ($76,379); 54 percent of the fraternal orders doing business in the District received total payments of less than $10,000 in 1975.

The amount of insurance sold in the District by the fraternal orders is obviously insignificant. In 1975 the tax expenditure related to this exemption amount to only $42,642.

D. Self-insurance.—In the last few years there has been a tremendous increase in the number of both self-insured pension programs and employee health and welfare benefit plans. Currently, there are 600,000 of these pension plans in the United States and 1 million health and welfare benefit plans. Self-insured group plans in effect allow the employer to become the insurer without paying any premiums taxes on the amounts placed in the employee trusts. If the employer actually assumes a sufficient portion of the risks formerly borne by an insurance company, he is offering an important substitute to group insurance written by the insurance industry. Tax equity would seem to indicate that he should pay the insurance tax.

What seems reasonable in theory may be prohibited by Federal law. The Employee Retirement Income Security Act (ERISA) of 1974 precipitated the tremendous growth in self-insured group (by the employer) and individual pension and welfare plans by offering tax breaks. In the as yet untested opinion of the U.S. Department of Labor pension and benefit plans which are federally controlled or audited under ERISA are exempt from State control and premiums taxes. Although the issue is far from settled, the Labor Department holds that employers who self-insure are not insurance companies and therefore may not be taxed as if they were such. If further analysis indicates, however, that these plans are a source of potentially significant tax revenues, the legal issue should be pursued.

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[11] The plan is offered by The Fortement Association, Inc., located in Maryland.

Another type of insurance which is not currently taxed by the District is the employee pension and welfare plans available through uninsured Multiple Employer Trusts (METS). Unlike the federally controlled trust, an administrator such as a bank establishes an uninsured MET and then actively solicits employers to join for a fee. Because the risks of benefit payouts are pooled, the uninsured MET acts as an insurer. Indeed, this is the position of the U.S. Department of Labor: the uninsured METS are not true employee benefit plans in the ERISA sense and they are taxable by the States as insurance companies. In the Nation there are only a dozen or so large uninsured METS, and various State attempts to impose premiums taxes on them are currently in litigation.

A related insurance mechanism which may also not be covered by the District's premiums tax law is an old but recently increasingly popular type of group annuity insurance policy which allows no tax to be paid on a large portion of the premiums. Under a "deposit administration contract" the insurance company collects a greatly reduced premium from the employer (5 to 10 percent of the normal premium).

"The difference between the normal premium and the reduced premium is then deposited in a special bank account in the employer's name, from which the insurance company pays most of the claims under the policy. It is agreed that no tax is due on the amount deposited in the special bank account because the employer is, in effect, acting as a "self-insurer".[12]

Since the amounts so deposited are not identified as belonging to an individual employee's plan, it is not easy to determine what portions would be subject to a given jurisdiction's premiums taxes. That is, the deposits are not considered premiums. However, the individual policy is purchased at the time of benefit payout so that the deposit administration contract resembles a single-premium annuity plan. If the remaining premiums tax cannot be paid by the employer at the time of initial deposit, there seems to be no reason why the insurance company cannot pay it when the benefits are paid. The entire premiums tax should be paid at some stage, because the obligations of the employer and the insurance company are provided for in a document designated as an insurance policy.[13]

The District tax expenditures related to all three loopholes, employer self-insurance, multiple employer trusts, and the joint insurance company-employer tax avoidance scheme, have not been determined. This step should be taken. In the past it has not generally been profitable for smaller employers to self-insure employee benefit plans, and therefore the practice has probably been more prevalent in industrial and manufacturing cities with large private companies. Now the incentives offered by ERISA plus the rising insurance costs indicate that smaller employers will increasingly tend to self-insure and the cost of the District of these loopholes can only increase.

ERISA also permits employees who do not have a pension plan where they work to set up their own plan on a tax-deductible basis. Although the number of annuity policies handled by the life insurance

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[12] Report of New Jersey Tax Policy Commission, chapter VII, "Taxation of Insurance Companies", in Conference on Alternative State and Local Public Policies, *New Directions in State and Local Tax Reform,* (Washington, D.C. 1977) p. 285.

[13] *Ibid.,* pp. 285–6.

companies increased tremendously with this new incentive, many individuals chose to insure themselves. The individual retirement accounts established with commercial banks, savings and loan associations, stock brokers, et cetera, are in direct competition with the insurance company plans. However, amounts so deposited avoid what little annuity taxation there is in the United States. (See chapter III).

Self-insurance is becoming popular in another area. Given the recent large cost escalation in commercial malpractice insurance, hospitals have been considering insuring themselves. Without a change in the tax law, this self-insurance would also avoid taxation.

4. Other tax avoidance mechanisms

As with the employer self-insurance plans, the tax revenue lost through other tax avoidance mechanisms is not known. Since premiums received for reinsurance assumed are not taxed by the District, insurance can be placed with a foreign insurance company not admitted to do business in the District and then reinsured and serviced by a foreign company licensed here without incurring tax liability on the first year policy premiums. Yet the District insurance tax law cannot be changed to eliminate the loophole because the Supreme Court has held that reinsurance provided by a foreign company cannot be taxed (*Connecticut General Life Insurance Co.* v. *Johnson*, 303 U.S. 77, 82 L. ed. 676, 1937). However, if a District agent or broker handles the initial insurance, he must pay the premiums tax. There is also the possibility that local business representatives travel outside the District and purchase group insurance from unauthorized foreign companies who can service it adequately. The tax loss on a single policy could be substantial.

Insurance placed with "off shore" insurance companies not operating through agents or brokers also remains untaxed. A third method of tax avoidance is used by unlicensed foreign companies which use mail campaigns to advertise and place insurance. It is doubtful whether using the mail within a jurisdiction constitutes sufficient taxable nexus. Not only does the District forfeit the tax revenue, but the District's Department of Insurance cannot supervise these companies and thereby protect District policyholders. Since the transaction and all servicing must be conducted by mail, however, mail order insurance is somewhat awkward, and until the late 1960's its volume has remained relatively low. Recently, buying insurance by mail has increased tremendously with associated premiums now over $1 billion.

To close each of these loopholes the New Jersey Tax Commission recommended that the State enact a new tax directed toward the purchase of insurance to supplement the insurance tax just as the tax supplements the sales tax.[14] Thus this new tax on the use of insurance to cover risks within the State would apply when the premium tax had not been paid. The New Jersey Tax Commission also recommended a broadening of the definition of insurance to include all employee protection plans whether handled by an insurance company or the employer. Connecticut already applies a 2.75 percent tax to self-insured employee benefit plans. Arizona taxes the premiums from both self-insured employers and industrial insurers contracting with

[14] *Ibid.*, p. 286.

unauthorized insurers at 3 percent. Other States which tax self-insurance at varying rates include Delaware, which taxes self-insurers at 4 percent of premiums payable on payroll, Idaho, which applies a rate of up to 2 percent and Tennessee, which taxes self-insurers at 4 percent. To simplify administration, the New Jersey Tax Commission suggested that the "insurance use tax" apply only when the taxpayer had premiums over $500 not liable to the premiums tax. This minimum would eliminate much mail order insurance. However, as with the present use tax, for tangible personalty enforcement of this use tax vis-à-vis small "purchases" would be difficult.

III. Interstate Comparison of Insurance Taxation

A. STATE PREMIUM TAXES

Chart 7 is a digest of the many different State taxes paid by insurance companies in the United States. The great diversity in tax treatments indicated on this chart has, as a practical matter, precluded as a part of this study an interstate tax burden comparison based on 50 different laws. However, a brief analysis of the chart reveals the salient features of insurance taxation in the District as compared with the rest of the Nation. First of all, the District's insurance premiums tax base is among the broadest in the Nation, and its 2-percent rate falls somewhere in between the rates prevalent in the other States.

1. Preferential treatment for domestic companies

A more precise rate comparison is not possible because the District's premiums tax is unusual in having a single, flat rate. Only three States, Maryland, Vermont and Nevada, apply a single flat rate to all kinds of insurance whether written by domestic or foreign companies. And Nevada allows large tax credits for premiums and property taxes paid if the insurance company's home or regional offices are within the State. Twenty of the 42 States which can be compared in a meaningful sense tax the premiums of foreign life companies at differentially higher rates. In addition, 38 States seem to discriminate in some fashion against foreign insurance companies in general. However, since some States require domestic companies to pay a franchise or income tax in lieu of, or in addition to, equal or differentially lower premiums taxes, the overall interstate comparison of tax discrimination against foreign insurance companies is unclear without further study.

CHART 7.—INTERSTATE COMPARISON OF TAXES ON INSURANCE COMPANIES

State	Premiums taxes	Special purpose taxes	Income/franchise taxes	Other taxes	Retaliatory law
Alabama	Rates: Domestic, 1 percent; foreign life, 1 percent on annuities; 3 percent on other premiums; Foreign, 4 percent—premiums taxes on foreign corporations progressively reduced to 1 percent when 10 percent of admitted assets invested in Alabama; wet marine/transportation, 0.75 percent of gross underwriting profit; surplus line brokers, 4 percent plus $26 license fee. Credits: Property taxes on property owned and 50 percent occupied in State; license fees and taxes; franchise tax; examination expenses. Exemptions: Premiums received for Alabama health care plans; losses may be deducted up to 50 percent of tax otherwise due. Payment: Annual.	Fire marshalls tax: 1 percent on fire insurers.	Franchise: $3/$1,000 of capital stock; minimum tax, $25. Payment: Annual.	Municipal fire and marine—4 percent of gross premiums; corporation permit fees; property taxes.	Yes.
Alaska	Rates: Domestic, 1.5 percent; foreign, 3 percent; health corporations, 6 percent of gross premiums less claims paid; title insurance, 1 percent; wet marine/transportation, 0.75 percent of gross underwriting profits. Deductions: Cancellations, returned premiums, unabsorbed portion of deposit premiums, policy dividends, unabsorbed premiums refunded to policyholders, refunds, savings. Exemptions: Fraternal benefit societies, annuity contracts; domestic, 5 yr from date of organization. Payment: Annual.	Corporation tax: Domestic, $50; foreign, $100.	Exempt	Authorized insurers and health corporations pay no other premium, franchise, income or privilege taxes.	Yes.
Arizona	Rates: Domestic, 1 percent; foreign and domestic with no home office in State, 2 percent; surplus line brokers, 3 percent; hospital and medical service corps, 1 percent; industrial insurers contracting with unauthorized insurers, 3 percent; workmen's compensation, 3 percent; self-insured employers, 3 percent. Deductions: Premium cancellations, return premiums, and dividends. Exemptions: Title insurance, reinsurance, annuity contracts. Payment: Annual. Minimum tax, $250.	Foreign and domestic with no home office in Arizona: 0.5 percent on motor vehicle insurance.	Income: Title insurance companies only; ranges from 2.5 percent on 1st $1,000 to 10.5 percent on 7th $1,000. Payment: Annual.	Real and personal property, agents license fees, transaction privilege, education excise, use tax.	Yes.

CHART 7.—INTERSTATE COMPARISON OF TAXES ON INSURANCE COMPANIES—Continued

State	Premiums taxes	Special purpose taxes	Income/franchise taxes	Other taxes	Retaliatory law
Arkansas	Rates: Foreign, 2½ percent; wet marine/foreign trade insurers, 0.75 percent; hospital and medical service corporations, 1 percent; unauthorized insurers, 2 percent; surplus line brokers, 4 percent; workmen's compensation, 3 percent. Deductions: Authorized insurers may deduct dividends and returns paid to policyholders. Exemptions: Domestic companies (other than workmen's compensation), fraternal benefit societies, annuities. Payment: Annual.	None	Franchise: Outstanding capital stock: Less than $500,000, $100, more than $500,000, $200. Payment: Annual. Income: Ranges from 1 percent on 1st $3,000 to 6 percent on taxable income over $25,000; gross income does not include—life insurance proceeds, return premiums on life insurance, endowments, or annuities. Deductions: Tax-free interest, reserves, investment expenses, real estate expenses, depreciation, interest paid, value of real estate. Exemptions: Foreign insurance companies; fraternal benefit societies. Payment: Annual.	Property taxes	Yes—except foreign companies with 15 percent or more stock owned by Arkansas corporations.
California	Rates: Foreign and domestic, 2.35 percent; federally exempt pension and profit sharing plans, 0.5 percent; ocean marine insurers, 5 percent; surplus line brokers, 3 percent; qualified plans, 0.5 percent. Deductions: Return premiums, reinsurance, title insurers—interest, dividends, rents, investment income, and profits. Payment: Quarterly if previous year's taxes were $5,000 or more.	None	Income: 9 percent of net income; minimum tax, $250. Payment Quarterly.	Real estate, trust business retaliatory taxes, motor vehicle fees and taxes.	Yes (unconstitutional).
Colorado	Rates: Foreign and domestic, 2¼ percent; companies with home or regional office in Colorado, 1 percent. Deductions: Reinsurance in Colorado, refunds, returned premiums (other than life). Exemptions: Qualified pension, profit sharing and annuity plans, fraternal benefit societies. Payment: Quarterly if previous year's taxes were $5,000 or more.	do	Exempt	Property taxes	Yes.
Connecticut	Rates: Foreign and domestic, 2 percent; unauthorized insurers, 4 percent; self-insured employee benefit plans, 2.75 percent except 2.5 percent if death benefits paid. Deductions: Returned premiums, dividends paid to policyholders. Credits: 80 percent of corporate income tax paid by domestic insurance companies with admitted assets of less than $50,000,000. Exemptions: Wet marine/transportation insurers and individual life and disability insurers, fraternal benefit societies, annuities. Payment: Semiannual if tax exceeds $1,000.	Expenses of examining domestic companies are assessed against the companies in proportion to amount of time used in examination of each.	Income: Domestic only; 10 percent of net income attributable to Connecticut. Payment: Semi/annual.	Real and personal property taxes.	Yes.

Delaware	Rates: Domestic and foreign, 1.75 plus 0.25 percent; wet marine/transportation, 5 percent of taxable underwriting profits; workmen's compensation, 4 percent; self-insurers, 4 percent. Deductions: Dividends returned to policyholders, returned premiums on canceled policies, unabsorbed portion of deposit premium. Credits: Canceled or returned premiums, reinsurance. Exclusions: Annuity contracts. Payment: Annual.	1 percent injury fund on workmen's compensation and self-insurers. Delaware Insurance Guaranty Association (not payable by life, title, disability, credit, mortgage guaranty, ocean marine) up to 2 percent.	Franchise: Sliding scale based on authorized capital stock—minimum tax, $20; maximum tax, $110,000. Payment: Quarterly if liability exceeds $5,000.	Property taxes	Yes.
District of Columbia	Rates: Foreign and domestic, 2 percent. Deductions: Reinsurance, returned premiums, dividends paid to policyholders. Payment: Quarterly prepayment if liability exceeded $2,000.		Exempt	Real property tax	No.
Florida	Rates: Foreign, 2 percent; Annuities, 1 percent; wet marine/transportation, 0.75 percent; surplus lines tax, 3 percent. Deductions: Reinsurance, returned premiums. Exemptions: Domestic insurers, fraternal benefit societies, hospital medical service plans. Credit: Foreign insurers with regional office in Florida get 50 percent tax credit; corporate income tax. Payment: Quarterly.	State fire marshal regulatory assessment, 5/8 of 1 percent. Payment: Annual.	Income: 5 percent of net income apportioned to Florida $5,000 net income exemption. Payment: Quarterly.	Property taxes, 1 percent local premium.	Yes, except companies 15 percent of whose stock is owned by Florida corporations.
Georgia	Rates: Foreign and domestic, 2¼ percent; reduced to 1¼ percent if 25 percent of company assets invested in Georgia; reduced to ½ percent if 75 percent invested in Georgia; surplus line brokers, 4 percent. Deductions: Returned premiums on canceled policies, premiums returned on change of rates municipal taxes. Exemptions: Ocean marine, reinsurance, foreign trade insurance, insurance on vehciles or aircraft outside State, common insurance on property, railroads, insurance on aircraft and interstate flights. Farmers' mutual insurance companies operating in up to 4 counties, fraternal, secret, and industrial societies. Payment: Quarterly.	Firemen's pension fund; 1 percent on fire insurance companies.	Exempt	Property taxes, 1 percent local premium taxes on life insurance companies.	Yes.
Hawaii	Rates: Authorized domestic insurers, 2.6325 percent; domestic life, 1.755 percent; foreign life, 2.925 percent; ocean marine, 0.8775 percent; surplus line brokers, 4.68 percent; all others, 3.8075 percent. Deductions: Return premiums, dividends paid, reinsurance accepted. Exemptions: Mutual and fraternal benefit, reinsurance, annuities. Payment: If preceding years liability was—over $5,000, monthly; $1,000 to $5,000, quarterly; under $1,000, annually.	None	do	Real property, sales, and use	No.

CHART 7.—INTERSTATE COMPARISON OF TAXES ON INSURANCE COMPANIES—Continued

State	Premiums taxes	Special purpose taxes	Income/franchise taxes	Other taxes	Retaliatory law
Idaho	Rates: Domestic and foreign, 3 percent; domestic rate reduced to 1 percent if 25 percent of assets or reserves invested in Idaho; title insurance, 1 percent; self-insurers, 1.3 percent ($50 minimum) plus 0.7 percent ($25 minimum); workmen's compensation, 1.3 percent ($50 minimum); hospital and medical service corps, 1 cent per month per contract. Deductions: Returned premiums, dividends paid to policyholders, reinsurance. Exemptions: Qualified pension, profit sharing, life insurance, annuity plans, county mutual, and fraternal benefit societies. Payment: Annual.	do	Franchise: Graduated scale based on authorized capital stock—up to $5,000, $20; over $2,000,000, $300 (not paid by fire, marine, life, accident, surety insurers).	Real property tax	Yes.
Illinois	Rates: Foriegn, 2 percent; surplus line brokers, 3 percent. Deductions: Return premiums, dividends paid to policyholders, local fire department taxes, income tax. Exemptions: Domestic companies (principal office in Illinois, knowledgeable personnel, conduct majority of underwriting, policy issuing and serving operations relating to Illinois policyholders, and open books and records); fraternal benefit societies, annuities purchased for nonprofit or educational employees, group insurance contracts of SEGIA. Payment: Quarterly if liability over $5,000.	Fire marshals tax, 0.5 percent. Payment: Annual.	Income: 4 percent; special apportionment formula for insurance companies. Payment: Quarterly.	Local fire department taxes; real and personal property taxes.	Yes.
Indiana	Rates: Foreign and domestic electing to pay premiums tax instead of gross income tax, 2 percent. Deductions: Reinsurance received on Indiana risks from authorized companies, dividends paid to resident insureds, premiums returned. Exemptions: Fraternal benefit societies, annuity contracts. Credit: Fire marshalls tax. Payment: Quarterly.	do	Income: 3 percent of AGI on insurance companies not subject to premiums tax Payment: Quarterly.	Property taxes	Yes.
Iowa	Rates: Foreign and domestic, 2 percent; marine insurance, 6.5 percent. Exclusions: Reinsurance, qualified pension, annuity, profit sharing or individual retirement annuity plans, returned premiums. Exemptions: Fraternal beneficiary, county mutual associations, nonprofit hospital, and medical corporations Payment: Annual.	None	Franchise: Graduated rates based on stated capital. Ranges from $5 (not over $20,000) to $3,000 ($500,000,-000 and over). Payment: Annual.	do	Yes.
Kansas	Rates: Domestic, 1 percent; foreign, 2 percent. Deductions: Fire taxes, return premiums, reinsurance received from authorized companies, dividends returned to policyholders, premiums of qualified pension, annuity, and profit-sharing plans, Exemptions: Fraternal benefit societies. Credit: Domestic companies, 25 percent liability if 30 percent of assets are invested in Kansas securities. Payment: Annual.	Fire marshals tax, 0.75 percent on fire insurance; firemen's relief fund, 2 percent on fire and lightning insurance (deductibles for domestic companies).	Income: 5 percent of net income when organized under Kansas law.	5 percent local fire insurance tax; property taxes.	Yes.

Kentucky	Rates: Foreign and domestic (except life), 2 percent; surplus line brokers, 3 percent; additional tax of 0.75 percent on workmen's compensation and self-insurors. Deductions: Dividends on accident and health insurance premiums paid on health care policies. Exemptions: Fraternal benefit societies. Payments: 3.	Fire insurance tax, 0.75 percent.	Exempt	Domestic life: 70 cents per $100 of taxable capital plus 0.1 cent per $100 of taxable reserves plus county or city in which principal office is located 15 cents per $100 of taxable capital; property taxes; municipal premiums tax.	Yes.
Louisiana	Rates: Surplus line brokers, 2.5 percent; life, health, accident, service, endowment, annuity—premiums of $7,000 or less, $140; over $7,000, $140 plus $170 per $10,000; Others—Premiums of $6,000 or less, $180; over $6,000, $180 plus $200 per $10,000; ⅓ of above rates apply if ⅓ of total assets are invested in Louisiana property. Deductions: Return premiums. Exemptions: Fraternal benefit societies. Payment: Annual.	State fire marshals tax, 1.25 percent; municipal fire tax, 2 percent (paid by foreign (except life, companies); additional tax on fire insurance premiums on Louisiana property, 0.25 percent.	Income: 4 percent of taxable income. Exemptions: Local life insurance associations, mutual casualty insurance companies, employee's beneficiary associations, teacher's retirement fund associations. Payment: Quarterly if liability expected to exceed $1,000.	Municipal premiums tax; foreign companies pay a 2 percent local fire department tax; property taxes.	Yes.
Maine	Rates: Domestic, 1 percent; foreign, 2 percent. Deductions: Return premiums, dividends paid to policyholders. Exemptions: Qualified pension, profit-sharing and annuity plans. Payment: Quarterly if liability exceeds $500.	0.6 percent on fire insurance companies (may be omitted if sufficient funds are available to defray expenses).	Exempt	Real and personal property taxes.	Yes.
Maryland	Rates: Foreign and domestic, 2 percent; unauthorized insurers, 3 percent; perpetual policies of fire insurance on Maryland property 1/15 of 1 percent of deposits. Deductions: Returned premiums, dividends, and refunds paid to policyholders. Exemptions: Nonprofit hospital plan Corporations fraternal beneficiary associations, annuities. Credit: Domestic companies—franchise tax paid fees paid to insurance commissioner (may not exceed 15 percent of tax due). Payment: 2 installments if liability exceeds $1,000.	Auto insurance fund: 2.25 percent of aggregate net auto liability premiums.	Franchise: Domestic companies, graduated from $20 for capital stock under $10,000 to $390 for stock of $5,000,000 plus $20 for each $1,000,000 in excess of $5,000,000.	Real and personal property taxes	Yes.
Massachusetts	Rates: Foreign and domestic, except life, marine, and fire, 2 percent plus 14 percent surtax; life insurers, 0.25 percent of net value of policies or 2 percent of premiums plus 14 percent surtax; marine and fire, 5 percent plus 14 percent surtax. Deductions: Return premiums, reinsurance. Exemptions: Annuity contracts. Payment: Annual.	Investment income tax on domestic insurers, 1 percent; administrative expense assessment—varies to produce an amount sufficiant to operate department of insurance; Massachusetts Fire Fighting Academy—may not exceed 0.25 percent of premiums.	Exempt	Property taxes	Yes.

CHART 7.—INTERSTATE COMPARISON OF TAXES ON INSURANCE COMPANIES—Continued

State	Premiums taxes	Special purpose taxes	Income/franchise taxes	Other taxes	Retaliatory law
Michigan	Rates: Foreign life, casualty, and title, 2 percent; foreign fire, marine, and auto, 3 percent; unauthorized insurers, above +$25. Deductions: Life—original annuities; others—return premiums, reinsurance, dividends paid members by mutual insurance companies. Exemptions: Domestic insurers, nonprofit philanthropic or social organizations, employee voluntary associations, fraternal benefit societies. Payment: Semiannual.	None	do	Real estate, securities deposited in Michigan, tangible personal property held for investment in Michigan.	Yes.
Minnesota	Rates: Foreign and domestic, 2 percent; marine insurance companies, 5 percent of taxable underwriting profits. Deductions: Return premiums, annuity premiums. Payment: 5 installments.	Fire marshalls tax, 0.5 percent. Payment: Annual.	Income: 12 percent of taxable net income apportioned to Minnesota. Credit: Premiums tax.	Real property tax; firemen's relief association in large cities, 2 percent surcharge on fire premiums on property in those cities.	Yes.
Mississippi	Rates: Foreign, 3 percent; additional 1½ percent on foreign retirement, thrift, deferred compensation, State employee life and health plans; foreign annuities—2 percent; qualified plans-exempt or retaliatory rate; domestic 1½ percent less real estate taxes up to $20,000; domestic annuities, 1 percent; qualified plans-exempt. Deductions: Reinsurance, cash dividends, returned, or canceled premiums. Exempt: Fraternal benefit societies. Payment: Annual.	Fire marshalls tax, 0.5 percent; insurance commissioner fund (fund limited to $100,000) contributions.	Income: 3 percent on first $5,000 of taxable income, 4 percent on income over $5,000. Exempt: Fraternal benefit societies. Payment: Annual.	Property taxes; sales taxes; Jackson Firemen & Policemen Disability Fund—fire and casualty companies contributions.	Yes.
Missouri	Rates: Foreign and domestic, 2 percent; workmen's compensation, 3 percent plus 0.5 percent of total compensation paid. Deductions: Canceled or returned premiums, life insurance companies, dividends held for reduction of premiums. Exemptions: Premiums received annually for qualified pension, profitsharing, individual retirement annuity plans. Credits: Income, franchise, personal property taxes, and fees. Payment: Annual.	None	Exempt—State; Kansas City and St. Louis impose 1 percent net income tax on insurers.	Real and tangible personal property taxes; local premiums taxes.	Yes.
Montana	Rates: Foreign and domestic, 2¾ percent; wet marine/transportation, 0.75 percent of gross underwriting profit. Deductions: Cancellations, returns premiums, certain refunds to industrial policyholders, dividends on savings coupons. Exemptions: Consideration received on annuity contracts, domestic farm mutual, domestic benevolent fraternal benefit, health service corporations, annuity contracts. Credit: If 50 percent of paid-in capital stock invested in Montana securities, any State taxes may be deducted from premiums tax. Payment: Annual.	Fire marshall's tax, 0.75 percent; firemen's pension fund, 1½ percent of fire insurance premiums.	Exempt	Property taxes	Yes.

Nebraska	Rates: Domestic, 0.6 percent; foreign, 2 percent of direct premiums (including annuities). Deductions: Dividends paid—return premiums. Exemptions: Fraternal benefit societies, reinsurers, qualified plans. Payment: Annual.	Fire marshall's tax: Domestic, 0.25 percent of fire insurance premiums; foreign, 0.5 percent of fire premiums less return premiums. Payment: Annual.	Income: 4.25 percent of 1st $25 000 of taxable income and 4.675 percent of taxable income over $25,000. Credit: premiums taxes. Payment: same as Federal.	do	Yes.
Nevada	Rates: Foreign and domestic, 2 percent. Deductions: Return premiums, reinsurance, dividends returned to policyholders, savings, and unabsorbed premium deposits. Credit: Insurer with regional or home office in Nevada receives 50 percent tax credit on premium taxes and full credit on property taxes paid on home office. Premium tax may not be reduced to less than 20 percent of amount due before taking credit. Exemptions: Fraternal benefit societies, nonprofit hospital/medical/dental corporations, motor clubs, bail bondsmen, qualified pension, profit-sharing and annuity Payment: Annual.	None	None	do	Yes.
New Hampshire	Rates: Foreign and domestic, 2 percent (minimum tax; $2.00); ocean marine, 5 percent of taxable underwriting profit in New Hampshire; unauthorized insurers, 4 percent; independently procured insurance, 4 percent except 2 percent for marine insurance. Deductions: Return premiums, dividends paid to policyholders. Exemptions: Annuity premiums, mutual insurance companies operating on assessment plan. Payment: Semiannual.	do	Franchise: Domestic, ranges from $60 to $2,000. Payment: Annual. Income: Foreign and domestic, 7 percent on net profits. Credit: Premiums tax. Payment: Quarterly.	do	Yes.
New Jersey	Rates: Foreign and domestic, 2 percent; group accident and health, 1 percent; workmen's compensation, 0.25 percent; marine companies, 5 percent of average annual underwriting profit; unauthorized insurers, 3 percent. Deductions: Reinsurance, return premiums, dividends returned or credited to policyholders, franchise and personal property taxes (life insurers). Exemptions: Fraternal beneficiary, sickness and death benefit societies, annuity premiums. Payment: Annual.	Firemens' relief association—foreign fire companies pay 2 percent of premiums in each fire district; commissioner of banking and insurance—fee to cover expenses of office levied on domestic life insurers in the proportion which total investment in securities of each company bears to the investment in securities of all.	Franchise (local, in lieu of personal property taxes)—domestic life insurers, 1.75 percent of taxable premiums on residents less reinsurance, returned premiums, dividends and discounts. Taxable premiums may not exceed 12½ percent of total premiums; domestic stock insurance companies, 2 percent. Payment: Semiannual.	do	Yes (life insurers pay no personal property taxes).
New Mexico	Rates: Foreign and domestic, 2.5 percent which may be reduced to 0.75 percent if at least 40 percent of company's assets are invested in New Mexico. Deductions: Return premiums and reinsurance on New Mexico risks, dividends paid to policyholders. Exemptions: Fraternal benefit societies, annuity premiums. Payment: Annual.	None	Exempt	do	Yes.

CHART 7.—INTERSTATE COMPARISON OF TAXES ON INSURANCE COMPANIES—Continued

State	Premiums taxes	Special purpose taxes	Income/franchise taxes	Other taxes	Retaliatory law
New York	Rates: "Additional Franchise Tax"—Life, accident, health, 1 percent; other, 1.2 percent. Deductions: Reinsurance, return premiums, dividends on direct business. Exemptions: Companies exclusively doing annuity business, medical and hospital service corporations, fraternal benefit societies, annuity premiums. Credits: Fire department tax, special taxes, Buffalo and New York City taxes paid. Payment: Quarterly.	Fire department tax on foreign fire insurers, 2 percent; stock workmen's compensation security fund, 1 percent gross premiums less return premiums; mutual workmen's compensation security fund, 1 percent; public motor vehicle security fund, 1 percent; property and liability insurance security fund, 1 percent (contributions cease when fund reaches $200,000,000 resume when fund drops to $150,000,000); motor vehicle financial responsibility law, $7.5055006/$1,000 of premiums; insurance department fund, $2.28309/$1,000.	Franchise: 9 percent of net income allocated to New York plus 4/10 mills per $1 of subsidiary capital allocated to New York; minimum tax, $125; maximum tax, 2.65 percent of premiums. Payment: Quarterly.	do	Yes.
North Carolina	Rates: Domestic workmen's compensation, 1.6 percent; foreign workmen's compensation, 4 percent; domestic life and annuities, 1.5 percent; other domestic, 1 percent or corporate income tax; foreign, 2.5 percent; fire and lightning companies, additional 1 percent; hospital and medical service corps, 0.33 percent of gross annual collections from membership dues. Deductions: Reinsurance, return premiums. Exemptions: Qualified pension, profit-sharing and annuity plans, nonprofit fraternal orders, farmers mutual fire insurance companies. Payment: Annual or quarterly if headquartered in a State which requires North Carolina insurers to pay quarterly.	Firemen's relief fund, 0.5 percent of premiums received from work in cities having fire equipment value of $1,000.	Income: Domestic companies (except workmen's compensation and life) must pay the greater of the 6 percent income tax or 1 percent premiums tax.	Property taxes; sales and use taxes.	No.
North Dakota	Rates: 2½ percent of gross premiums, membership, and policy fees. Deductions: Return premiums, reinsurance, refunds to policyholders. Exemptions: Fraternal benefit, domestic stock, and mutual insurance companies (latter 2 pay fire marshall tax), annuity premiums. Payment: Annual.	Fire marshalls tax, 0.5 percent less return premiums; domestic companies only. Payment: Annual.	Income: Domestic companies may pay in lieu of premiums tax: Rates—1st $3,000, 3 percent; $3 to $8,000, 4 percent; $8 to $15,000, 6 percent plus; 1 percent surtax on income over $2,000.	All except corporate income and personal property taxes.	Yes.
Ohio	Rates: Foreign, 2.5 percent; unauthorized insurers, 5 percent. Deductions: Return premiums, reinsurance. Exemptions: Domestic companies, fraternal benefit societies, annuity premiums. Payment: 2 installments.	Fire marshalls tax, 0.5 percent less return premiums and reinsurance.	Franchise: Domestic only. Base: capital and surplus or 8⅓ times the gross premium receipts in State. Rate: 0.3 percent (minimum $25). Payment: Annual.	Rear estate	Yes.

Oklahoma	Rates: Foreign, 4 percent; surplus line and unauthorized insurers; 6 percent. Deductions: Return premiums and dividends paid to policyholders. Exemptions: Domestic companies, farmers unions and farmers mutual insurance associations, fraternal benefit, nonprofit hospital service and medical indemnity, annuity premiums. Credit: Tax may be reduced to 0 if 30 percent of assets invested in Oklahoma real estate or securities. Payment: Quarterly if liability exceeds $1,000.	Fire marshalls tax: 5/16 of 1 percent; license fee, $100 foreign only.	Income: Domestic companies, 4 percent of taxable income. Payment: Quarterly.	Property taxes	Yes.
Oregon	Rates: Foreign and domestic organized after Jan. 1, 1971 and owned or controlled by a foreign corp, 2¼ percent; foreign wet marine/transportation, 5 percent of underwriting profit; tax doesn't apply to annuities. Deductions: Return premiums, dividends paid to policyholders. Exemptions: domestic companies, fraternal benefit societies. Payment: Annual.	Fire marshalls tax: 0.75 percent of premiums from fire insurance business.	Income: Domestic companies, 7 percent of net income.	Real and personal property taxes.	Yes.
Pennsylvania	Rates: Foreign and domestic, 2 percent; marine insurers, 5 percent; unlicensed insurers, 3 percent. Deductions: Premiums returned on canceled policies, reinsurance. Exemptions: Domestic title insurers, mutual beneficial associations, and nonprofit hospital and medical associations, annuity premiums. Credit: 50 percent of amount invested in neighborhood assistance programs up to $175,000. Not available to foreign fire and casualty companies. Payment: Annual.	None	Exempt	Title insurers—Share tax of 15 mills per $1 of share value; real property tax; city premiums tax of 2 percent on domestic mutual life and fire having principal office in city.	Yes.
Rhode Island	Rates: Foreign and domestic, 2 percent; marine insurance, 5 percent of average annual underwriting profits allocated to Rhode Island. Deductions: return premiums, reinsurance. Exemptions: Fraternal benefit societies, annuity premiums. Payment: Quarterly if liability exceeds $500.	do	do		Yes.
South Carolina	Rates: Domestic, 2 percent, which cannot exceed 5 percent of net income after deducting additions to reserves; foreign, 2 percent, which can be reduced by 0.25 percent for each 25 percent of premium receipts invested in South Carolina plus 1 percent additional tax (less return premiums); workmen's compensation and self-insurers, 4.5 percent. Deductions: Dividends paid to South Carolina policyholders, return premiums on cancellations. Exemptions: Fraternal benefit orders operating under lodge system, annuity premiums. Payment: Annual.	Fire inspection tax: 1/10 of 1 percent; firemen's fund, 1 percent paid by foreign fire companies.	do	Property taxes; license fees; domestic—$100 to $300; foreign, $200 (½ of foreign company tax allocated to counties by population).	Yes.
South Dakota	Rates: Domestic, 0.5 percent on premiums and annuities; domestic with principal home office outside South Dakota, 2 percent; foreign, 2.5 percent; foreign annuity, 1.25 percent; unauthorized insurers, 4 percent; surplus line brokers, 3 percent. Deductions: Reinsurance and return premiums. Exemptions: Farm mutual and fraternal benefit societies, qualified pension, profit sharing, and annuity plans. Credit: Foreign, 50 percent of premiums tax plus property taxes on home office if located in State. Tax cannot be reduced past 20 percent of tax due before credit. Payment: Annual.	Fire marshals tax: 0.5 percent	None	Real and personal property taxes.	Yes.

CHART 7.—INTERSTATE COMPARISON OF TAXES ON INSURANCE COMPANIES —Continued

State	Premiums taxes	Special purpose taxes	Income/franchise taxes	Other taxes	Retaliatory law
Tennessee	Rates: Foreign and domestic, 2 percent (minimum $150); domestic life, 1.75 percent (minimum $150); annuities, 1.5 percent; workmen's compensation, 4 percent; self-insurers, 4 percent (minimum $5); surplus line brokers, 2 percent insurance companies (except life insurers) with at least 25 percent of total assets invested in Tennessee securities may have tax reduced by 25–75 percent depending on percent of assets so invested. Exemptions: Qualified pension, profit-sharing and annuity plans, fraternal benefit societies. Payment: Semiannual.	Tennessee Guaranty Association Tax, 3 cents per $1,000 for valuing life insurance policies; fire marshalls tax, 0.5 percent of fire premiums.	Franchise: 15 cents per $100 of capital stock, surplus and undivided profits. Exemptions: Insurance companies acquiring Tennessee mortgages and deeds of trust from Tennessee banks. Credit: Premiums tax (if not applied against income tax liability). Payment: Annual Income: 6 percent of net earnings. Credit: Premiums tax (if not applied against franchise tax liability). Payment: Quarterly if tax exceeds $2,000.	Real and personal property taxes.	Yes.
Texas	Rates: Foreign life, health, and accident, 3.3 percent (could be reduced to 1.925 percent if certain percentages of assets invested in Texas securities); domestic life, health and accident, 1.1 percent; other, 3.85 percent (could be reduced to 1.1 percent if certain percentages of assets invested in Texas securities); HMOS, 1 percent. Deductions: Life, health, accident, reinsurance, 1st year premiums; other—return premiums, dividends paid policyholders. Exemptions: Annuity premiums. Payment: Annual.	Maintenance taxes: Fire and casualty, 0.2 percent; casualty and fidelity, 0.2 percent; motor vehicle insurers, 0.1 percent; title insurers, 0.2 percent (these are current rates which could rise to 1.25, 0.4, 0.2, and 1 percent respectively, if fund warrants).	Exempt	Property taxes	Yes; except those having 15 percent plus stock owned by Texas corporations.
Utah	Rates: Foreign and domestic, 2.25 percent; mutual fire and lightning if operations exceed boundaries of 4 contiguous counties, 0.5 percent; ocean marine insurance, 5 percent of underwriting profit; surplus line brokers; 3 percent. Deductions: Premiums returned, dividends, property taxes, examination fees. Exclusion: Reinsurance. Exemptions: Fraternal benefit societies, nonprofit hospital corporations, benefit associations and co-op associations, annuity premiums. Payment: Annual.	None	do	Property taxes; sales and use taxes.	Yes.
Vermont	Rates: Foreign and domestic life, 2 percent premiums collected in Vermont; other foreign and domestic, 2 percent premiums written in Vermont. Deductions: Reinsurance, return premiums, dividends paid to Vermont policyholders. Exemptions: Foreign mutual fire insurance companies insuring Vermont mills and factories, annuity premiums. Payment: Quarterly if tax exceeds $500.	do	do	Property taxes	Yes.

Virginia	Rates: Life Insurance, 2.25 percent; special or additional life insurance benefits, 2.75 percent; industrial sick benefit, 1 percent; workmen's compensation, 2.5 percent plus .25 percent for 2d injury fund; all other, 2.75 percent. Deductions: Reinsurance, cancelled policies, dividends paid by mutual companies. Exemptions: Local mutual fire, fraternal benefit, insurers providing group insurance for employees, annuity premiums. Payment: Quarterly if tax exceeds $500.	Administrative tax: 0.1 percent; registration fees, based on authorized maximum capital stock—$15,000 and under, $10 up to $300,000 and over, $50.	do	Real and personal property tax	Yes.
Washington	Rates: Domestic, 1 percent; foreign and those requiring payment on entire premium at inception of policy, 2 percent; ocean marine foreign trade contracts, 0.75 percent. Deductions: Return premiums. Exemptions: Qualified pension, profit-sharing and annuity plans, title companies, fraternal benefit societies. Payment: Annual.	None	do	Real, tangible personal property, sales and use taxes.	Yes.
West Virginia	Rates: Foreign and domestic, 2 percent plus 1 percent; annuities received by life insurers, 1 percent plus 1 percent (if 25 percent of assets are in West Virginia securities, 1 percent additional tax is omitted). Deductions: Cancellations, return premiums, amounts credited to subscriber accounts as savings. Exemptions: Farmer's mutual fire insurance, fraternal beneficiary societies. Payment: Annual.	Fire prevention and control tax, 0.5 percent.	License tax: Domestic: ranges from $20 on authorized capital stock of $5,000 or less up to $2,500 on stock of $15,000,000 and over; foreign, on issued and outstanding capital stock which is represented by property owned and used in West Virginia—above rates plus 75 percent of above (minimum $250). Payment: Annual.	Property taxes	Yes.
Wisconsin	Rates: Fire companies, 2⅜ percent; marine companies, 0.5 percent; surplus line, unauthorized insurer, independently procured ocean marine insurance, 3 percent; casualty, surety, mortgage guaranty, domestic and foreign life insurance, 2 percent. Deductions: Domestic life—interest required to maintain reserves, rental income on taxed real estate, premiums on annuity contracts; foreign life—distributions of profits to resident policyholders, annuity premiums; fire and marine—return premiums and cancellations; all but domestic life—returns, cancellations, dividends; domestic—½ of personal property tax not to exceed 25 percent of tax due. Payment: Annual, except quarterly by foreign fire, marine, casualty, life insurers.	Fire insurance tax, 2 percent	Income: Domestic nonlife: Ranges from 2.3 percent on 1st $1,000 up to 7.9 percent over $6,000. May not exceed amount that would be paid with a 2 percent gross income tax. Payment: Quarterly if tax exceeds $2,000.	do	Yes.
Wyoming	Rates: Foreign (except annuities), 2.5 percent; domestic (except annuities), 1.5 percent (rate reduced to 1 percent if 25 percent of assets invested in Wyoming); annuities, 1 percent; wet marine/transporation, 0.75 percent; surplus line brokers, 3 percent. Deductions: Return premiums on canceled policies, dividends returned to policyholders plus for domestic title insurers, portion of premiums chargeable to title searches. Exclusion: reinsurance. Exemptions: Qualified pension. profit-sharing and annuity plans, fraternal benefit societies. Payment: Annual.	None	None	Real and personal property taxes.	Yes.

The potential benefits to the District of taxing foreign and domestic insurance companies at different rates appear to be limited. Because of State retaliatory premiums tax laws raising the premiums tax rate for foreign companies would probably result in other States' applying these new, higher rates to premiums on policies written in those States by the District's domestic companies. This kind of discrimination is discussed further at the end of section IV. In addition, new companies interested in a District location might look elsewhere in this region in order to avoid the general effect of retaliatory laws.

A discriminatory general rate reduction for domestic companies would probably not attract enough new insurance business to the District to warrant the associated revenue loss. Two related discriminatory tax policies used by the States also offer few net benefits to the District for the same reasons. Nine States apply lower rates to companies which have home or regional offices within the State or which have a certain, unusually substantial, portion of total admitted assets invested in real estate or securities in those States. This type of tax policy results in giving hidden preferences to domestic companies since foreign companies are less likely to make these investments. At least one State, Alaska, encourages new domestic insurance companies by abating the premiums tax for the 5 years following their incorporation.

With the possible exception of the tax on annuity considerations (see below), neither the general rate reduction for domestic companies nor the more specific tax inducements would attract significant new insurance business to the District. Other factors play greater roles in insurance companies' locational decisions. According to a 1974 study of insurance company locational decisions vis-à-vis the District,[15] new companies affiliated with an existing firm are likely to share the administrative facilities of that firm. Thus, the parent company's location is the key factor, not the tax rate. New unaffiliated companies usually market to only a few States and locate their principal administrative office within that region. Within the region changes in State regulation and organizational requirements (such as capital and surplus requirements) do not act to attract such offices but can be negative factors in "pushing" these officers to other States. Based on a careful survey, the authors of the study contend that the major positive locational fatcors considered by very large unaffiliated companies are the availability of substantial amounts of reasonably priced land and skilled clerical personnel, rather than a lower tax rate. What few smaller companies the District might attract with a differentially lower premiums tax rate for domestic firms would not add enough to the District economy and overall tax base to offset the overall revenue loss.

2. Differential taxation of types of insurance

Several States tax the various lines of insurance at different rates, and these practices need to be reviewed to determine possible benefit to the District. As indicated above, hospitalization and medical insurance are often taxed at lower rates, if not exempted altogether.

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[15] J. David Cummins and Douglas G. Olson, *Insurance Administrative Facilities in the District of Columbia: Attraction, Retention, and Impact,* the Wharton School of (Philadelphia, 1974).

Marine and transportation insurance is frequently taxed on the basis of gross underwriting profits, and the District's insurance tax law also appears to require this same basis for marine insurance taxation. The law was amended in 1937, but the title 35, chapter 11, requiring marine insurance to be taxed on the basis of underwriting profits, was never superseded. Nonetheless, for as long as can be remembered, marine insurance has been taxed on the basis of gross premiums. Further legislation may be in order to clarify this situation.

Another practice fairly common among the States is the taxation of premiums received by surplus line brokers at differentially higher rates. These brokers handle lines of insurance offered by unauthorized companies but not available through authorized companies. Since there is no danger of retaliation against domestic companies, the States have not been discouraged from raising these rates. Although no attempt was made here to estimate current revenues from District premiums taxes paid by surplus line brokers, the additional revenue from a 1-percentage point increase in the tax rate would be insignificant. Moreover, any tax rate hike would tend to increase the cost of supplying District residents and businesses insurance plans tailor-made to their special needs.

Workmen's compensation insurance and title insurance are sometimes taxed at differentially higher and lower rates respectively. A 1-percentage point increase in the tax rate applied to District workmen's compensation insurance premiums would raise an estimated additional $450,000 in annual revenue. However, such an increase does not seem advisable, since, like the costs inherent in the minimum wage levels and the unemployment compensation tax, the costs of workmen's compensation insurance are a part of the total costs of doing business in the District, and increases might be counterproductive in terms of city revenue.

A 1 percentage point decrease in the tax rate applied to title insurance premiums would cost the District an estimated $19,000 in annual revenue. Without further study, there seems to be no compelling reason for such a reduction.

3. Taxation of annuity considerations

One of the most distinguishing features of the District's insurance premiums tax is that the 2-percent rate applies to annuity considerations or premiums. Only four jurisdictions, the District of Columbia, Georgia, Kentucky and Louisiana, tax all annuity premiums at the same rate that applies to domestic and foreign life insurance. Twelve States (see chart 8) tax premiums from annuity contracts at the general life-insurance rates and exclude (or tax at a very nominal rate) premiums paid in connection with the funding of pension, profit-sharing, and annuity plans and individual retirement accounts qualified or exempt under two or more of the following Internal Revenue Code sections: 401(a), 403, 404, 408, or 501. Three States tax all annuity premiums at rates lower than the general life rates. And still another four States apply differentially lower rates to annuities but exclude premiums paid under the qualified plans. The majority of States (28) exclude annuity premiums altogether from net taxable premiums. However, eight States in this last group subject annuity and other premium income to corporation income or franchise taxes.

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CHART 8.—*State taxes on premiums from annuity contracts*

Same rate as domestic/foreign life insurance on all annuities (4):

District of Columbia—2 percent/2 percent; Georgia—1.25 percent minimum/2.25 percent; Kentucky—Tax on capital stock/2 percent; Louisiana—$140 for first $7,000 premium plus $170 for each next $10,000, domestic and foreign.

Same rate as domestic/foreign life insurance, qualified plans at nominal rate or exempt (12):

California—2.35 percent/2.35 percent (qualified plans, 0.5 percent), Colorado—2.25 percent/2.25 percent, Idaho—3 percent/3 percent, Illinois—income tax/ 2 percent, Iowa—2 percent/2 percent, Kansas—1 percent/2 percent, Maine—1 percent/2 percent, Missouri—2 percent/2 percent, Nebraska—0.6 percent/2 percent, Nevada—2 percent/2 percent, North Carolina—2.5 percent/1.5 percent, Washington—1 percent/2 percent.

Lower rate than domestic/foreign life insurance on all annuities (3):

Alabama—1 percent[1]/1 percent, Florida—income tax[1]/1 percent, West Virginia—1 percent/1 percent.

Lower rate than domestic/foreign life insurance, qualified plans exempt (4):

Mississippi—1 percent/2 percent[2], South Dakota—0.5 percent[1]/1.25 percent, Tennessee—1.5 percent/1.5 percent, Wyoming—1 percent/1 percent.

Premiums from annuity contracts exempt (28): Alaska, Arizona, Arkansas, Connecticut, Delaware, Hawaii, Indiana, Maryland, Massachusetts,[3] Michigan,[4] Minnesota, Montana, New Hampshire,[5] New Jersey, New Mexico, New York,[5] North Dakota,[6] Ohio,[4] Oklahoma,[6] Oregon,[6] Pennsylvania,[6] Rhode Island, South Carolina, Texas, Utah, Vermont, Virginia, Wisconsin,[6]

If the District were to tax all annuity premiums at 1 percent, the tax expenditure (revenue loss) would be about $150,000. Completely eliminating the tax on annuities would lower revenues by an estimated $300,000. The precise tax expenditure that would result from exempting premiums paid under the qualified plans is not known. However, since virtually all of the group annuities and a sizable portion of the individual annuities issued by the life companies are sold in connection with federally qualified (section 401) pension plans and (section 403(b)) tax-deferred annuity plans[16] the estimated revenue loss of this partial exemption would probably be from $250,000 to $280,000.

The major drawbacks to eliminating all or some of the tax on annuities are, of course, the loss of revenue and a further erosion of the District's tax base. For these reasons, in 1972 the District government opposed a bill, H.R. 15050, which proposed dropping the premiums tax on annuities. At that time there was no anticipation of the subsequent growth spurt in the annuity business due to the Federal legislation. The average annual growth in the number of annuity and supplementary contracts in force in the Nation was 6.3 percent from 1971 through 1974. The following year the number of contracts increased 17.3 percent.

Five years ago the arguments in favor of eliminating this tax were more manifest than they are today. Yet the basic questions of tax competition and tax equity remain. In 1973, Acacia Mutual Life Insurance Co., the largest domestic life-insurance company, was preparing to greatly increase its sales of pension and other tax-sheltered annuities

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[1] Same as domestic life insurance premiums.
[2] Domestic qualified plans—exempt; foreign qualified plans—exempt or retaliatory.
[3] Domestic companies pay an income tax on investment income from annuity business.
[4] Premiums paid to foreign companies are exempt if for original annuities.
[5] Foreign and domestic companies pay an income tax on, inter alia, annuity income.
[6] Domestic companies pay an income or franchise tax on, inter alia, annuity income.
[16] Robert W. Cooper, "The Annuity Premium Tax, A Cost-Benefit Study," in Appendix to J. David Cummins and Douglas G. Olson, "Insurance Administrative Facilities in the District of Columbia: Attraction, Retention and Impact" (Phila., Pa., 1974) Appendix, p. 58.

Source: American Council of Life Insurance.

by enlarging its volume of individual fixed annuities and entering the variable annuity and group fixed annuity fields.[17] To accomplish these plans and to enter the new variable life insurance market, Acacia was going to establish a new subsidiary in the spring of 1974. According to Acacia, it would have preferred to have located the subsidiary in the District, thereby avoiding additional costs of learning another State's insurance laws, time involved in being admitted to do business elsewhere, and separate administration. However, Acacia felt that, without a law change exempting annuities from the premiums tax, a number of States would impose retaliatory taxes,[18] thus placing Acacia at a competitive disadvantage. This cost of a District location apparently outweighed the several benefits, and, in 1974 the subsidiary, Acacia National Life Insurance Co., was incorporated in Virginia and located in Fairfax City.

Government Employees Life Insurance Co. (GELICO), another domestic company, had also voiced concern about the annuities tax. GELICO's annuity business had been limited, but it felt that to remain competitive in marketing life insurance to State-local government employees, it would have to emulate other life companies and offer, inter alia, tax-deferred annuity plans.[19] GELICO's entry into this new field was stymied because other States having domestic life companies which wrote annuity plans in the District would have retaliated and taxed GELICO's annuity considerations at the District's 2-percent rate.

The decision of Acacia to locate its subsidiary in northern Virginia is probably irreversible. Yet the tax on annuities must act as a disincentive to other domestic life companies which wish to start or expand their annuity lines in the District or in any State with retaliatory laws. Indeed, there is some indication that another large domestic company is contemplating relocating outside the District to avoid the consequences of the tax on annuities. Since so many State tax annuities at nominal rates, if at all, our domestic companies are placed at a definite competitive disadvantage. Furthermore, foreign companies might be discouraged from writing substantial annuity plans if much of their premium income is allocated to the District. How much the annuities tax affects total annuity sales is difficult to determine. In 1975, annuity premiums constituted 6.8 percent of total D.C. gross premiums received by all life companies. This contrasts with the national average 17.4 percent.[20] No doubt these statistics are influenced by the unusual nature of the District's economy; the large Federal sector with its own retirement income plan. However, the statistical difference appears striking.

These statistics also reflect the difficulty the insurance industry in the District has in competing with other financial institutions and savings media who vie for corporate pension funds and individual retirement savings. Pension funds held by banks and trust companies are not subject to the annuity tax. Moreover, since the expense loads for large pension plans are small (about 2 percent of contributions) for both group annuities and uninsured trusts, the additional 2 percent tax on

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[17] *Ibid.*, p. 25.

[18] It should be noted that retaliation would not occur if the aggregate amount of fees and taxes paid by District company to State *A* exceeded the fees and taxes that would be paid to the District by a like company domiciled in State *A*. See section on retaliation.

[19] *Ibid.*, p. 32.

[20] Life Insurance Fact Book, 1976, p. 7.

annuities increases costs substantially. These cost differentials are quite visible during sales discussions with large employers, given the usual cost itemization during the presentations.

Until ERISA and subsequent legislation, the small employer and the individual preparing for his own retirement, were handicapped by the tax on annuities. Unlike the large employer, small employers found it uneconomical to set up uninsured, trusted pension plans. Instead they were forced to use insured pension plans which until the last 15 years were generally taxed by the States, thereby lowering employee retirement benefits or raising employer costs. The only alternative to insurance plans for the individual were individual savings. In recent years the possibility of individual retirement accounts in banks and savings and loan associations and various tax breaks for employers who self-insure have moderated but not completely eliminated the discrimination inherent in taxing premiums paid into insurance company annuity plans.

To a large extent these various discriminatory features of the annuity premiums tax led many states to reduce or eliminate the tax over the last 20 years. "During the 15 year period 1959 through 1973, 7 States repealed their annuity premium tax, 11 States modified their statutes to exempt certain annuity premiums from taxation, and 2 States reduced the tax rates applicable to (qualified plans)." [21] As the States lowered the tax burdens on annuities, the insurance industry began to reverse the marked downward trend in their share of the pension market that developed during the pension boom of the 1950's.

It should be noted that if tax equity indicates that the annuity premiums tax should be eliminated, in removing the loophole for amounts contributed to employee trusts, contributions to insurance company pension plans also should remain untaxed.

4. Ear-marked premium taxes

The District is one of 19 States with no additional premiums tax which is ear-marked to finance special purposes. The most popular of these ear-marked taxes is the add-on tax for fire protection or prevention or a firemen's pension fund. Twenty-six States rely on this method of financing these services. The rates range from 0.5 percent to 2 percent and typically apply to premiums received by fire insurers. In addition, the subdivisions of several States impose local fire insurance taxes based on premium receipts.

Four States apply add-on rates to the premium tax on automobile liability insurance in order to finance auto-related regulation. The most notable example of this approach is the 2.25 percent tax designated for financing the Maryland Automobile Insurance Fund, the pool for uninsured drivers. Although there are several other special purpose premiums taxes, the other major one is the additional rate for financing the costs of regulating insurance companies. In most cases, the assessment is that premiums tax rate (or other ad valorem rate) which will just cover the administrative costs.

Although there are strong arguments against ear-marked taxes per se, there is considerable justification for some of the add-on premiums taxes. In pricing property and casualty insurance within a given insurance region (which the District is), premium taxes are

[21] Cooper, p. 4.

explicitly and demonstrably added to the premiums due. To the extent that these add-on rates are in fact shifted to the customer, those who ultimately benefit from the fire protection or from insuring high risk drivers would incur some of the costs of these services. The advisability and feasibility of these schemes should be given further scrutiny.

A general additional premiums tax rate to finance the D.C. Department of Insurance is probably unwarranted. First, unlike the domestic companies, foreign companies pay the cost of their infrequent examinations by the Department and, therefore, should be excluded from such a charge. In the second place, since the costs of supervising the domestic companies are not proportional to their business, a flat percentage rate applied to District premiums is inappropriate. Such a scheme would be especially inequitable for large domestic companies chartered here but conducting relatively little business here. Recovering insurance company examination costs is an important issue, however, and should be considered as a potential new user charge for the District.

B. RETALIATORY LAWS

The basic concept of retaliatory insurance premium taxation was briefly outlined at the beginning of this chapter. Although experts disagree as to whether the practice of retaliation has actually restricted the insurance industry's relative contribution to state finance, they concur that because of its potentially discriminatory effects, retaliation must always be considered in any insurance tax law revision. In addition, there is much evidence to indicate that retaliatory laws have hindered past moves to reform and/or increase insurance taxes.

Three issues confront the District regarding retaliatory laws. First, since the District is one of only four jurisdictions [22] with no such law, would the adoption of a retaliatory mechanism benefit the District? Second, how are the District's insurance tax policy alternatives constrained by retaliation? And third, if retaliation thwarts desirable tax changes, what can the District do to help eliminate or weaken retaliatory practices throughout the country?

The first retaliatory premiums tax law was enacted by Massachusetts in 1856. Since that time retaliatory laws have been challenged unsuccessfully on the bases of unconstitutional delegation of legislative power, violation of the equal protection clause of the 14th amendment, and violation of the requirements of taxation uniformity. Until 1944 when the Supreme Court reversed its opinion made 76 years earlier,[23] insurance transactions across State borders were not considered to be interstate commerce. This decision might have resulted in retaliatory laws being declared unconstitutional because they interfered with interstate commerce. Directly after the 1944 decision, however, the Congress, under pressure from the insurance industry, enacted the McCarran-Ferguson Act.[24] Although apparently not intended by Congress, this act effectively sanctioned a continuation of retaliatory taxation by declaring that continued regulation and taxation by the several States of the insurance business was in the public interest. A

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[22] The other three are Hawaii, New Mexico, and North Carolina.

[23] *Paul* v. *Virginia* (1868), 75 U.S. (8 Wall.) 168; *United States* v. *South-Eastern Underwriters Association* (1944) 322 U.S. 533.

[24] Public Law 15, 79th Congress (chapter 20, 1st session), March 9, 1945.

subsequent Supreme Court decision upheld the McCarran Act, stating that in its enactment Congress must have known of the existing tax systems and was, in effect, intending to endorse them.[25] Moreover, the Supreme Court maintained that the power of Congress over commerce is not restricted, except as the Constitution expressly provides, by any limitation which forbids it to discriminate against interstate commerce and in favor of local trade.[26]

While a few of the present State statutes provide for retaliation within only a limited area, most laws are comprehensive in scope. These retaliatory laws involve complex legal and technical issues, and, therefore, will not be reviewed here. The basic retaliatory mechanisms must be understood, however, before the injurious effects of retaliation can be appreciated. Most States with retaliatory statutes use the "aggregate" basis of computing the retaliatory taxes to be paid, if any. According to this method, the total burden of usually recurrent taxes, licenses, and fees[27] that would be imposed by State *A* on a company domiciled in State *B* and doing business in State *A* is compared with the similar total burden a similar company domiciled in State *A* would have to pay for doing business in State *B*. The company domiciled in State *B* would have to pay the greater of the two totals to State *A*.

The item by item method compares each tax or fee for each item and takes the higher of State *A*'s or state *B*'s. The final sum so derived can be quite burdensome. One expert feels that this computational basis could result in exceptionally high tax burdens if one State were to replace the premiums tax with a net income tax. A State retaliating on an item by item basis might require the payment of both taxes. Hence this same expert stresses the importance of eliminating or modifying retaliatory laws before a State enacts any major insurance tax reform.[28]

Two other features of retaliatory statutes and related administrative and judicial rulings underline the potentially discriminating effects of retaliation. First, in 1972, the statutes of 28 states[29] required the taxes imposed by political subdivisions to be included in the tax comparisons. This additional feature not only increases administrative costs but, depending on how the local tax portion of the retaliatory taxes is computed, also can increase substantially the premiums tax burden especially for companies domiciled in large urban centers with local premiums taxes. Having no political subdivision, the District, of course, would not be threatened by this kind of retaliation. In fact, including local rates in the retaliatory calculation would add to the potential revenue gain to the District of adopting a retaliatory law.

The choice of the event that triggers retaliation can also be rather discriminatory. Apparently, there is no general rule. In a few states

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[25] *Prudential Insurance Co. of America* v. *Benjamin* (1946) 328 U.S. 408.

[26] Buckner S. Novis, "The Status of Retaliatory Legislation," paper read before the Association of Life Insurance Counsel, December 11, 1956 (New York, N.Y.), p. 380.

[27] Sometimes nonrecurrent items such as fines, security deposits, etc. are used.

[28] John C. Pyle, "The Metamorphic Retaliatory Tax Laws (What Lies Ahead?)," presented to the Association of Life Insurance Counsel, May 8, 1972 (White Sulphur Springs, W. Va.), p. 882–883.

[29] Alabama, Alaska, Arizona, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Idaho, Kentucky, Maine Maryland Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, Oklahoma, Oregon South Dakota, Tennessee, Utah, Virginia, West Virginia, Wyoming.

administrative and judicial rulings have gone to the extreme in declaring that a domestic company need not actually be doing business in the state against whose domestic companies retaliatory taxes are to be imposed.[30] In a different vein, retaliatory laws and court decisions are often not clear in limiting retaliation to insurance companies in the same line of business. Sometimes the only limitation is "similar" lines of business. In a few other States there appears to be virtually no limitation, and when State *A* increase taxes for casualty insurance, State *B* might retaliate against State *A*'s life companies. Both kinds of triggering events must be anticipated and studied carefully in any insurance tax law change.

Although the District is in the distinct minority with no retaliatory premiums tax law, adopting such a statute offers no particular advantage. It has been estimated that a retaliatory law would yield $220,000 in revenues in fiscal year 1978, an amount that would grow apace of the District's insurance business.[31] However, if the District adopted such a staute, not only would it join the parade of states with this misbegotten legislation, but also it would not offer any protection to its domestic companies. When retaliatory laws were first enacted, the States involved were primarily interested not in revenue production but in protecting domestic companies by keeping the tax rates, et cetera, imposed by the various States on foreign companies in line. To a large extent state premium tax rates have been kept at 2 percent for both foreign and domestic insurers. But the lack of rate increases may be attributable to the belief on the part of State legislators that insurance companies were already overtaxed when compared with other types of corporations.[32]

In comparison with the ever-growing pressure for State-local revenue, though, this belief and the deterrent of retaliation threats may be weakening. An increasing number of States may be forced to raise premium taxes, and the consequent retaliation will hurt the very domestic companies the retaliatory laws were initially designed to protect. In fact, domestic companies are the loser whichever route the State chooses. If it raises tax rates for foreign and alien insurers, there is retaliation. Alternatively, other States might raise the rates paid by only domestic companies in order to avoid retaliation (witness New York's temporary rate structure 1971–74). In general, the more out-of-State business a domestic company has, the more it will favor the second alternative which is less costly to the company.

A general rate hike, of course, is an expensive combination of the two alternatives.

Although the additional retaliatory taxes the District-chartered companies would pay with a one percentage point increase in the general rate were not estimated here, calculations made in New Jersey and Maryland amply demonstrate the magnitudes involved. The New Jersey Tax Policy Commission found that "for each dollar of additional revenue to New Jersey some companies would pay as much as $10 to other States." [33] A bill was introduced in the Maryland Senate (S.B. 790) in 1975 which would have raised that State's general pre-

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[30] Pyle, pp. 889–894.
[31] Cooper, p. 66.
[32] Pyle, pp. 866–869.
[33] New Jersey Tax Policy Commission, p. 285.

miums tax rate from 2 to 3 percent. Subsequent analysis revealed that the retaliatory costs for large interstate companies incorporated in Maryland would be enormous. Every retaliating State in which Maryland companies operated would raise taxes on these companies by up to about 50 percent. In contrast with the additional $160,000 that Maryland's largest company, U.S. Fidelity and Guaranty (a property and casualty company), would pay Maryland, this company's tax liabilities for other States would increase by $6.3 million or by a factor of almost 40. The ratios of retaliatory cost to State revenues were not so dramatic for other companies, but several ratios were around 10.0 and 12.5. With these enormous automatic costs combined with insurance industry lobbying it is no wonder that retaliatory laws have had a stranglehold on State legislatures.

CHART 9.—1975 DISTRICT OF COLUMBIA GROSS PREMIUMS AND TOTAL DIRECT PREMIUMS OF INSURANCE COMPANIES DOMICILED IN THE DISTRICT OF COLUMBIA

Name of company	District of Columbia gross premiums (1)	Total direct premiums (2)	Ratio of District of Columbia to total premiums (1)÷(2)
Property and casualty companies:			
Columbia Real Estate Title Insurance Co	$305, 127	$1, 407, 327	0.2168
Abbey Casualty Insurance Co. of D.C	422, 928	427, 091	.9903
Amalgamated Casualty Insurance Co	1, 316, 653	1, 631, 625	.8070
American Home Owners Insurance Co	307, 468	349, 829	.8789
Bankers Mutual Insurance Co	922, 575	1, 985, 503	.4647
Columbia Mutual Insurance Co	570, 142	570, 142	1.0000
Criterion Insurance Co	2, 512, 503	55, 268, 936	.0455
Firemen's Insurance Co. of Washington, D.C	1, 302, 275	2, 729, 451	.4771
Government Employees Insurance Co	18, 859, 762	597, 468, 554	.0316
Guardian Insurance Co	49, 740	64, 016	.7770
Hamilton Insurance Co	942, 908	1, 757, 147	.5366
Home Casualty and Surety Co	11, 941	17, 515	.6818
Tri-State Insurance Co	57	81	.7037
Life companies:			
AAA Life Insurance Co	20, 604	1, 734, 524	.0119
Acacia Mutual Life Insurance Co	760, 948	65, 619, 648	.0116
American Capital Life Insurance Co	117, 966	434, 477	.2715
American Citizens Life Insurance Co	285, 706	296, 519	.9635
General Services Life Insurance Co	40, 049	2, 840, 325	.0141
Government Employees Life Insurance Co	954, 943	21, 806, 890	.0438
Mutual Life Insurance Co. of Washington, D.C	882, 844	1, 621, 013	.5446
Peoples Life Insurance Co. of Washington, D.C	943, 339	56, 312, 638	.0168
United Services Life Insurance Co	116, 907	31, 210, 411	.0037
Washington Life Insurance Co			

In view of these retaliatory costs, raising the tax rate for District domestic companies would probably be less expensive for the District and its domestic companies than discriminatory rate increases for the foreign companies. Over 95 percent of the total business of the larger District-chartered companies is written outside of the city. (See chart 9) Certainly these companies would prefer to pay a higher rate on less than 5 percent of their business than on 95 percent of their business. Also, the District might lose these companies to the suburbs if they were faced with the retaliation that would follow a rate increase for foreign companies. Especially the large property and casualty companies would be tempted to relocate because their short-term policies give them greater mobility. However, the economic costs to the city of such relocation are somewhat lower than they seem at first because the main offices of the two largest domestic property and casualty companies as well as a moderate size company are already in nearby Maryland.

A rate increase for domestic companies only would be quite injurious to the smaller companies which write over half of their business here. Furthermore, an additional percentage point for domestic company business would yield only an estimated $320,000 annually.

Since retaliatory premium taxes can result in both highly discriminatory tax burdens and awkward constraints on tax increases and reform, eradication of these laws appears to be a desirable goal. There is not much that any State can accomplish unilaterally. Some States have tried, and their efforts are worth noting. In 1971, Massachusetts initiated a policy of reciprocal nonretaliation. In effect, Massachusetts agreed not to retaliate against insurance companies domiciled in States which do not retaliate against Massachusetts companies. In face of large assessments by Massachusetts of prior year's retaliatory taxes on its domestic companies, New York enacted reciprocal nontaxation in 1973, thus eliminating retaliation between those two States. Although this voluntary agreement may seem to be a solution, the lack of insurance industry support and the slow rate of acceptance do not augur well for its future.

Of course, in order to agree not to retaliate a State must have a retaliatory statute. And, to induce other States to join, the threat of retaliation against companies domiciled in those States must imply significant costs. Since the District's insurance market is rather small, the potential costs to another State's insurance industry from District retaliation are limited. For the District to enact retaliatory laws simply to jump on the bandwagon for reciprocal nonretaliation seems unwarranted.

Another way to reduce the threat and effect of retaliation is to allow domestic companies a tax credit for retaliatory taxes. In its major insurance tax reform of 1974 New York eliminated its discriminatory premiums tax on domestic company premiums, reduced its rates for the premiums-based franchise taxes for all companies, and enacted for all companies a franchise tax based on net income at half the rates for ordinary corporations. Anticipating some retaliatory effects due to increase tax burdens for some foreign companies, New York granted domestic companies a credit on their franchise taxes of up to 90 percent of taxes payable to other jurisdictions when these taxes exceed the taxes due in New York. The upper limit of the credit is the tax due in New York.

At the present time there are both Federal legislation pending and an organized effort being made by the Council of State Governments and the National Association of Tax Administrators to reduce the effects of retaliation. Last year S. B. 3884, "The Federal Insurance Act of 1976", was introduced by Senator Brooke. With some modifications, this bill was reintroduced this year as S.C. 1710. The major purpose of this legislation is to offer, inter alia, insurance companies Federal charters and a guaranty fund to deal with insolvency the way the Federal Deposit Insurance Corporation insures commercial banks. Both versions of the Federal legislation contain a prohibition against State retaliation directed toward federally chartered insurance companies. The State would be allowed to tax these companies at the lowest (even discriminatory) rates applicable to foreign companies, but they could not assess any retaliatory taxes. An indirect effect of this act, if enacted, might also weaken the threat of retaliation if the

States felt less need to protect domestic companies by not raising the premiums tax rates. Despite the benefits offered by Senator Brooke's proposal, the bill will not be submitted for markup this year, and its future is uncertain.

The Council of State Governments also recommends direct action against retaliatory laws. Specifically, this organization has drafted and will encourage the adoption of a model State reciprocal nonretaliation law.[34] This legislation is patterned after the two such laws already in existence. In 1974 the National Association of Tax Administrators passed a resolution encouraging their members to advocate reciprocal nonretaliation legislation.

The District might wish to support the Brooke bill and the recommendations of the Council of State Governments and the National Association of Tax Administrators. It seems especially fitting to urge the U.S. Congress to correct the wrong wrought by the McCarran Act. As to the District's own legislative program, no change, that is, no enactment of retaliatory laws, appears to be the best course.

IV. Impact of the District of Columbia Insurance Tax

The preceding sections of this paper dealt with the differences between the District's and other State's premium tax statutes and the opportunities for limited tax reform indicated by some of these differences. No systematic effort was made to compare premium or total tax burdens on the District's insurance business with tax burdens on District businesses and the insurance business in other States. Such comparisons are necessary to determine if the tax impact on this city's insurance industry is so nonneutral as to warrant major tax law revision.

A. METHODOLOGY

To measure tax impact appropriate measures of taxable or economic capacity of the firm and/or the industry must be developed. These measures are the denominators or the tax base proxies. The actual premium taxes paid are the numerators. Which measures are used depends on data availability and what is being compared. Each impact measure has limitations, but if these are kept in mind it is possible to draw some conclusions about relative tax burdens.

It should be noted that tax impact analysis treats the initial economic effects of a tax. It does not deal with the ultimate burden or incidence of the tax after successive shifting via the price mechanism to consumers or different classes of policyholders, labor and other suppliers of goods and services. Thus, a tax impact analysis will reveal nothing about tax incidence on savers who have entrusted their capital to life-insurance companies which many claim are quasifiduciaries. Tax impact analysis also says little about the taxation of wealth held or passed on to heirs in the form of insurance.

Several measures of taxable or economic capacity are feasible given adequate time and data. A gross measure which was used to compare the impact of the Connecticut insurance tax[35] with taxes on other industries is the gross product originating (GPO) from within the

[34] Council of State Government, 1977 Suggested State Legislation (Lexington, Ky., 1976).
[35] James A. Papke, *A Study of the Impact of Insurance Company Taxation in Connecticut* (Hartford, 1970).

State by type of industry. Since GPO is defined as the sum of payments to factors of production (profits, rent, interest, wages and salaries, etc.), it represents a particular industry's contribution to the State's total output of goods and services. Alternatively, GPO can be viewed as the extent to which an industry uses a State's resources and benefits from the factor and product markets within the State. The extent of this benefit could be considered proportional to the benefits received from State government services.

Taxable or economic capacity is more commonly thought of as a net concept. For businesses the ability to pay usually refers to all income to that business net of the cost attributable to a fairly standard list of goods and services. The net income flows of property and casualty companies and such short-term plans as 1-year renewable term insurance are fairly amenable to facile measurement. The main difficulties are representing the effects on income of statutory requirements regarding assets and operations. However, the economic net income of the life insurance business as well as annuities, and noncancellable accident and health insurance is not readily susceptible to measurement. It is not clear, for example, what portion of the dividends paid to policyholders by the large mutual companies is attributable to investment and underwriting earnings and whether these earnings are part of the company's economic capacity or the policyholders' savings. In addition, the greater reserve requirements for stock life companies, not having the surplus cushion enjoyed by the mutuals in case of large, sudden claims on their group plans, result in lower net income for these companies. Another anomaly of the life insurance business is the income portion of the investment yield which may belong to the policyholders as required allocations to life insurance reserves, pension plan reserves and interest expense. Finally, the long-term nature of the risks involved in life insurance may result in an apparent profit during the early years of a life contract and an overall loss in a later year because of an untimely death.

In the Life Insurance Company Income Tax Act of 1959 Congress for the first time taxed the life companies' total income at ordinary corporation rates. From 1921 until 1958 these companies were taxed at ordinary corporation rates but only on their net investment income. Although far too complex to discuss at length here,[36] this new Federal law adjusts the definition of net taxable corporation income in an attempt to place the life companies on an equivalent net income and tax basis with other insurance companies and ordinary corporations. Both underwriting profits and net investment income are included in taxable income. The major adjustments to the definition of corporation net taxable income are outlined as follows. Decreases in certain insurance reserves are treated as income, and certain deductions peculiar to the insurance business (for example, claims paid for benefits and losses incurred on contracts, principal and interest added to special reserves, amounts paid to reinsurer for assumption of risks) are allowed. Policyholders' dividends are permitted as deductions to the extent that they do not reduce total net income substantially below net investment income. Subject to the same floor, a cushion for disaster-related losses is provided to stock companies by allowing deductions

[36] For an excellent discussion see William B. Harman, Jr., "The Pattern of Life Insurance Company Taxation Under the 1959 Act", 15th Annual Tulane Tax Institute, pp. 686–758.

for non-participating contracts and group accident and health contracts. Taxable investment income of the stock life companies can only be positive and is equal to investment yield minus the policyholders' share plus long term capital gains and minus such items as long-term tax-exempt interest. Whenever the gain from operations (essentially underwriting profits plus taxable investment income) is less than (up to a certain amount of difference) or equal to taxable investment income, this gain is the tax base. The most important differential treatment of stock life companies occurs when the gain from operations exceeds the taxable investment income. In this case, the current tax base is the taxable investment income plus one-half of difference between taxable investment income and the gain from operations. The tax on the remaining half is accumulated by the stock life company in a deferred tax account which represents, in effect, a contingency fund against future losses. There are limitations as to the length of the deferral period.

As can be seen from this very brief overview, the derivation of a net income measure for life companies that is conceptually equivalent to net income of other corporations is very complicated. Rather than repeat this procedure for measuring taxable capacity, one could simply use net taxable income for all insurance companies and other corporations as reported on their Federal returns [37] and allocate an appropriate portion of this income to the District. This was done by Papke in his several State insurance tax studies. He also used selected items from the Federal returns to develop a definition of net taxable income for Connecticut domestic insurance companies that was equivalent to net taxable corporation income under the Connecticut franchise tax law. The hazard in this approach is that the several adjustments under the Federal law appear to restrict unduly the taxable base of the stock life companies relative to the income tax base of other corporations.

Whereas use of the Federal definition and tax return data would produce some interesting results, the short cut taken in this analysis relies on a broader base and produces results that appear to be comparable to the findings of other tax impact studies. For this study the starting point was the economic capacity measures employed in the California and Alabama studies: [38] net gains from operations (net income from underwriting, investment and other sources) after the deduction of dividends paid to policyholders but before the deduction of Federal income taxes plus net realized capital gains. Two variations were then constructed. The first, capacity measure 1, approximated net taxable income under the D.C. corporation franchise tax law. State premium taxes, which, like franchise taxes, would not be allowable deductions, were added to the base, and interest on tax-exempt Federal, State and local bonds was subtracted. The second measure represented a proxy tax base if the D.C. franchise tax law were amended to end the above interest exemption; that is, Federal, State, and local bond interest was added back.

This short cut does not represent the peculiar nature of the life-insurance business, and, because it relies on the cost accounting of

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[37] Mutual companies file a return (1120M) which is quite similar to the ordinary corporation return (1120) filed by stock property and casualty companies.

[38] John W. Cowee, Robert C. Goshay, and Frederic P. Morrissey, *Taxation of the Life Insurance Industry in California*, Association of California Life Insurance Companies (Oakland, 1964) and Paul E. Alyea, *Taxation of Life Insurance Companies in Alabama*, Association of Life Insurance Companies (Alabama, 1966).

insurance companies, it does not amortize any high prepaid acquisition costs for new or quickly growing companies over the earning cycle of their contracts. In the case of the District companies the latter defect should not distort the results very much.

The data were drawn from the 1975 annual statements submitted to the Department of Insurance by the District's domestic companies. There was no effort made to smooth out the sometimes considerable annual fluctuations by using tax collections and capacity measures for several years. Once the U.S. base was ascertained for each company, it was necessary to allocate the proper share to the District. This was done by applying to the total capacity measure the ratio between D.C. gross premiums and total written premiums for each company. Although this single factor formula is used by several States in allocating the net income tax base of insurance companies for purposes of income taxation, it may not reflect the extent of insurance company investment activity within a given State. In the District, an insurance company must be licensed to do business in order to invest in real property here. But the extent of underwriting within the District probably bears no particular relation to the amount of investment here.

The customary three-factor formula used to allocate ordinary corporate income would reflect D.C. investment activity if gross investment earnings were included in the gross receipts factor. However, not only are the data needed for this formula unavailable, but also the other two factors, payroll and real property owned in the District, are not very good indicators of the extent of insurance business activity; an insurance company can engage in considerable underwriting with minimal physical presence.

Once the two capacity measures were developed for each domestic company, the impact of the premiums tax was calculated. This was done by dividing the D.C. premiums tax paid by each company on its 1975 taxable premiums by each of the capacity measures. Various central values were derived and then compared to the statutory D.C. corporation franchise tax rate as well as to average premiums tax impacts for the entire country. The national average impact ratios were computed in the same fashion as the District ratios except that total State premium taxes paid by each company and total company capacity measures were used.

Another interstate premiums tax impact comparison was developed by determining what premium taxes District domestic companies would pay and what effective rates would obtain if they were taxed under Maryland and Virginia laws. The 2.25 percent Maryland tax on premiums for automobile liability insurance was omitted because this is an earmarked tax for financing uninsured motorists via the Maryland Automobile Insurance Fund. The 0.1 percent Virginia tax on all premiums was included because it is akin to a general premiums tax except that it is meant to cover the cost of administering the Virginia Bureau of Insurance.

All of these various impact ratios represent only partial tax burdens. Insurance companies and ordinary corporations pay a variety of taxes in the District, ranging from sales and use taxes and highway and motor vehicle related taxes to real property taxes. The impact of these taxes is a function of the companies' spending patterns, highway use or property ownership. However, with the exception of the personal property tax which insurance companies do not pay in the District,

the differences in tax liabilities incurred under these other lines probably do not reflect structural inequalities among the District's business taxes. In addition, the requisite data are not readily available.

One final caveat is in order. The insurance tax impact ratios developed in this and, indeed, in other reports are not definitive measures of insurance tax burdens. The concept of net income is very complex as it relates to especially the life insurance business, and no one capacity measure accurately reflects this concept. The impact ratios contained in this analysis should, therefore, be viewed as rather general and imprecise indications of tax burdens.

CHART 10.—MEASURES OF PREMIUMS TAX IMPACT ON DISTRICT OF COLUMBIA DOMESTIC LIFE INSURANCE COMPANIES, DISTRICT OF COLUMBIA TAX AND TOTAL STATE PREMIUM TAXES, 1975

[Amounts in percentages]

Name of company [1]	Capacity measure [2]	Capacity measure [3]
District of Columbia premiums tax:		
AAA Life Insurance Co	56.62	11.10
Acacia Mutual Life Insurance Co	24.78	22.88
American Cap. Life Insurance Co	(4)	(4)
American Citizens Life Insurance Corp., District of Columbia	11.67	9.80
General Services Life Insurance Co	11.41	10.19
Government Employees Life Insurance Co	7.61	6.87
Mutual Life Insurance Co., Washington, D.C	27.90	25.11
Peoples Life Insurance Co	8.51	8.21
United Services Life Insurance Co	9.09	8.78
Aggregate mean	11.51	10.58
Company mean	19.69	12.86
Company median	11.67	10.19
Total State premium taxes:		
AAA Life Insurance Co	70.24	13.80
Acacia Mutual Life Insurance Co	26.88	24.81
American Cap. Life Insurance Co	(4)	(4)
American Citizens Life Insurance Corp, District of Columbia	10.01	8.40
General Services Life Insurance Co	6.53	5.83
Government Employees Life Insurance Co	8.16	7.37
Mutual Life Insurance Co., Washington, D.C	28.09	25.29
Peoples Life Insurance Co	9.32	9.00
United Services Life Insurance Co	6.67	6.44
Aggregate mean	11.10	10.42
Company mean	20.74	12.62
Company median	10.01	9.00

[1] Washington Life Insurance Co. is omitted from chart 10 and Tri-State Insurance Co. is omitted from chart 11.
[2] Net gain from operations before Federal income tax, after dividends to policyholders, plus net realized capital gain plus nondeductible taxes minus interest on exempt bonds.
[3] Same as [2] except including interest on exempt bonds.
[4] Indicates a negative capacity measure.

B. FINDINGS

Using both measures of taxable capacity, the impact computations show that the average effective D.C. premiums tax rate applied to domestic life insurance companies ranged from 10 percent to 13 percent in 1975. As indicated by chart 10, the District effective rates are only slightly higher than the national effective rates. Including Federal-State-local bond interest in the capacity measure lowers the average (weighted by size of company) by 1 percentage point. For those companies holding many of these bonds the choice of capacity measure influences their individual effective tax rates significantly. Because of the importance of Federal interest to AAA Life, the company average (equal weight for each company) differs substantially depending on which capacity measure is used. There appears to be no particular relationship between company size and effective tax rate, at least not for the study year, 1975.

Analyzing the tax impact of premium taxes paid by domestic property and casualty companies proved worthless. Like their competitors

across the Nation, most of the District's firms experienced drastic underwriting losses in the period from 1974 through 1976. Because they were not offset by high net investment income, these losses resulted in very low or negative income. The most recent "normal year" was, in fact, 1972. Nevertheless, chart 11 is included to show the relationship between a tax based on gross income and a measure of net income in a bad year; the premiums tax is very unforgiving.

CHART 11.—MEASURES OF PREMIUMS TAX IMPACT ON DISTRICT OF COLUMBIA DOMESTIC PROPERTY AND CASUALTY COMPANIES: DISTRICT OF COLUMBIA TAX AND TOTAL STATE PREMIUM TAXES, 1975

[Amounts in percentages]

Name of company [1]	Capacity measure [2]	Capacity measure [3]
District of Columbia premiums tax:		
Abbey Casualty Insurance Co. of District of Columbia	(4)	71.47
Amalgamated Casualty Insurance Co	(4)	(4)
American Homeowners Insurance Co	17.37	12.66
Bankers Mutual Insurance Co	2632.00	1915.00
Columbia Mutual Insurance Co	(4)	(4)
Criterion Insurance Co	(4)	(4)
Firemen's Insurance Co	23.31	16.36
Government Employee Insurance Co	(4)	(4)
Guardian Insurance Co	4.46	3.14
Hamilton Insurance Co	(1)	(4)
Home Casualty & Surety Co	1.31	0.90
Columbia Real Estate Title Insurance Co	3.99	3.63
Aggregate mean	NA	NA
Company mean	NA	NA
Company median	NA	NA
Total State premium taxes:		
Abbey Casualty Insurance Co. of District of Columbia	(4)	71.39
Amalgamated Casualty Insurance Co	(4)	(4)
American Homeowners Insurance Co	15.27	11.12
Bankers Mutual Insurance Co	2263.00	164.60
Columbia Mutual Insurance Co	(4)	(4)
Criterion Insurance Co	(4)	(4)
Firemen's Insurance Co	26.36	18.51
Government Employee Insurance Co	(4)	(4)
Guardian Insurance Co	3.46	2.43
Hamilton Insurance Co	(4)	(4)
Home Casualty & Surety Co	1.95	1.33
Columbia Real Estate Title Insurance Co	5.40	4.60
Aggregate mean	NA	NA
Company mean	NA	NA
Company median	NA	NA

[1] Washington Life Insurance Co. is omitted from chart 10 and Tri-State Insurance Co. is omitted from chart 11.
[2] Net gain from operations before Federal income tax, after dividends to policy holders, plus net realized capital gain plus nondeductible taxes minus interest on exempt bonds.
[3] Same as footnote [2] except including interest on exempt bonds.
[4] Indicates a negative capacity measure.

As discussed above, capacity measure 1 approximates the D.C. Corporation Franchise Tax definition of net taxable income. Using this tax base proxy, in 1975 domestic life insurance companies as a whole were taxed by the District at an effective rate of 11.51 percent. Individual companies were taxed at an average effective rate of 19.69 percent. Excluding AAA Life, the company average was 14.42 percent. These rates are substantially higher than the present 9.9 percent statutory rate applicable to ordinary D.C. corporations. On the basis of this limited comparison, then, insurance companies do not appear to be undertaxed relative to nonfinancial corporations. They may even be taxed at higher rates. Adding the personal property tax burden to the corporation franchise tax effective rate would probably slightly reduce this interindustry tax burden difference.

Chart 12 shows the tax burdens and revenues that would obtain if District domestic companies were taxed under Maryland and Virginia premiums tax laws. Since the only difference between the District and

Maryland premiums taxes is the Maryland exemption of annuity considerations, the total tax liabilities and average effective rates are close under both laws. The total estimated tax revenue under Maryland laws is $77,817 for the domestic life companies, only 1.3 percent below the District taxes these firms paid on their 1975 business. Using capacity measure 2, average domestic life company tax burden was 12.76 percent under Maryland law and 12.87 percent under District law.

The rate structure of the Virginia premiums tax is considerably higher than the District's 2-percent rate. Life insurance is taxed at a general rate of 2.25 percent plus the 0.1 percent administrative tax. All other insurance, excepting workmen's compensation insurance, is taxed at 2.75 percent plus the 0.1 percent. Apart from reinsurance and refunded premiums, only dividends paid by mutual companies to policyholder members are allowable deductions. Applying these higher rates to the premium income of District life companies results in average effective tax rates that are 20- to 25-percent higher than average effective tax rates under the District's premiums tax law. Revenues that would be produced by the Virginia law are 41-percent higher than actual District collections.

CHART 12.—PREMIUM TAXES DOMESTIC INSURANCE COMPANIES WOULD PAY UNDER MARYLAND AND VIRGINIA INSURANCE TAX LAWS BASED ON 1975 PREMIUMS

Name of company	Maryland law [1]		Virginia law [2]	
	Estimated tax liability	Tax impact (percent)	Estimated tax liability	Tax impact (percent)
LIFE COMPANIES				
AAA Life Insurance Co	$412	11.10	$587	15.81
Acacia Mutual Life Insurance Co	11,674	22.35	13,749	26.32
American Cap. Life Insurance Co	2,345	(3)	2,755	(3)
American Citizens Life Insurance Co	5,714	9.80	6,924	11.87
General Service Life Insurance Co	798	10.19	986	12.58
Government Employee Life Insurance Co	19,099	6.87	23,657	8.51
Mutual Life Insurance Co. Washington, D.C	17,519	25.11	21,887	31.37
Peoples Life Insurance Co. Washington, D.C	18,100	7.88	21,477	9.35
United Service Life Insurance Co	2,156	8.78	3,156	12.85
Washington Life Insurance Co.[4]				
Totals and aggregate mean	77,817	[5] 10.42	95,178	[5] 12.76
Company mean [5]	NA	[5] 12.76	NA	[5] 16.08
Company median	NA	[5] 10.19	NA	[5] 12.85
PROPERTY AND CASUALTY COMPANIES				
Abbey Casualty Insurance Co. of District of Columbia	8,459	71.47	12,053	101.83
Amalgamated Casulty Insurance Co	26,333	(3)	37,525	(3)
American Homeowners Insurance Co	6,149	12.66	8,763	18.04
Bankers Mutual Insurance Co	18,451	1915.00	26,293	2729.00
Columbia Mutual Insurance Co	11,403	(3)	16,249	(3)
Criterion Insurance Co	50,250	(3)	71,606	(3)
Firemen's Insurance Co. of Washington, D.C	26,046	16.36	37,115	23.32
Government Employee Insurance Co	377,195	(3)	547,185	(3)
Guardian Insurance Co	995	3.14	1,418	4.47
Hamilton Insurance Co	18,858	(3)	26,873	(3)
Home Casualty & Surety Co	239	.90	340	1.27
Tri State Insurance Co.[4]	1		2	
Columbia Real Estate Title Insurance Co	6,103	3.63	8,696	5.18
Total and aggregate mean	550,482	[5] 10.71	794,118	[5] 15.33
Company mean	NA	[5] 18.03	NA	[5] 25.69
Company median	NA	[5] 16.36	NA	[5] 23.32

[1] Calculations for property and casualty companies exclude additional 2.25 percent auto insurance premiums assessment to finance Maryland automobile insurance fund (uninsured motorists).
[2] Calculations for all insurance companies include 0.1 percent tax on premiums to finance Bureau of Insurance.
[3] Indicates a negative capacity measure.
[4] Omitted from impact measures.
[5] Excludes companies with negative capacity and Bankers Mutual Insurance Co.

V. Taxation of Insurance Company Net Income

Although States have traditionally taxed insurance companies on the basis of their gross premiums, these underwriting receipts are poor indicators of a company's ability to pay taxes. The rather large intercompany variation in the District's tax impact measures shown in chart 10 and the prevalence of losses shown for property and casualty companies on chart 11, chapter IV, demonstrate this point. The gross receipts tax also ignores a sizable portion of insurance company income, investment earnings. On the average, these earnings comprise about 20 to 21 percent of life insurance companies' income. This proportion varies from company to company, though. In 1975, gross investment earnings constituted on the average about 25.9 percent of D.C. domestic life companies' total gross income, but the share ranged from 14.9 to 39.7 percent.

Another drawback of the traditional State tax treatment of insurance companies is that, compared with ordinary corporations, these companies have historically carried higher State-local tax burdens. Several studies of State insurance taxes have come to this conclusion. Indeed, until the recent increases in the D.C. corporation franchise tax rate, D.C. insurance company tax burdens were probably much higher than other corporation tax burdens.

Now that the D.C. corporation franchise tax rate is 9.9 percent, the difference in apparent tax burdens has narrowed considerably. Should the rate fall back to 9 percent, starting with tax years beginning January 1, 1978 as called for in the Revenue Act of 1976, the burden gap will, of course, widen. It is not entirely clear, though, that the present 10 to 20 percent difference in effective tax rates applicable to insurance companies and ordinary corporations needs to be eliminated. Not only is this difference smaller than in most States which impose lower tax rates on corporate income, but also the special situation of the insurance industry may warrant a slightly higher effective tax rate. Apart from the utilities, no other industry is both specifically exempt from antitrust laws and is given special supervision and assistance by the States in protecting its customers.

The average level of tax burdens on insurance companies in the District, therefore, does not seem to be unreasonable. For a particular company, however, the D.C. premiums tax can exceed the company's net income allocable to the District. This latter drawback might warrant partially replacing the gross premiums tax with a tax on net income. Alternatively, insofar as insurance company investment income escapes taxation in the District, the substitute tax might be applied to these earnings alone.

Seventeen States impose net income taxes on insurance companies. They define taxable net income variously, some borrowing from the Federal definition. Eight States apply income taxes only to domestic companies, and another nine include all insurance companies. All laws, of course, apportion total net income to the individual State, usually assigning the greatest weight to the premiums ratio. As shown in chart 7, in most States where premiums taxes are also paid, the premiums tax may be credited against the income tax or vice verse. Often when both taxes are paid with no credit allowed, the rates for each will be fairly low. The premiums tax is still by far the most important form of insurance company taxation.

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If the District completely replaced its insurance premiums tax with a tax based on net income, at the present franchise tax rate of 9.9 percent, annual revenues would fall drastically. Using the corporation franchise tax base proxies developed for the domestic companies in the impact analysis, a 9.9 percent rate would have produced an estimated $100,175 in terms of these companies' 1975 tax liability, and only 14 out of 23 companies would pay any tax. With the broader base tax proxy which includes interest on government obligations, the estimated yield is $116,801. These yields contrast with the $629,357 premiums taxes paid in 1975 by the domestics. Assuming the same ratio between net income and premiums tax revenue for foreign companies (life companies and property and casualty companies being treated separately), the total yield of a net income tax on insurance companies even with the broader tax base would have been only $4.5 million in terms of 1975 liability. The actual total premiums tax liability was $8.8 million. Although 1975 was not a good year for insurance company profits, one-tenth of a percentage point decline in the premiums tax rate would probably necessitate a nine-tenths of percentage point increases in income tax rate in order to hold revenues constant. Although time did not permit, this relationship should be verified by sampling the income statements of the foreign companies and apportioning a measure of net income using a premiums ratio.

Taxing insurance company net income involves rather complicated legal and administrative issues which need to be studied carefully. To have sufficient nexus for taxation a foreign company must maintain a place of business within the District. Mere solicitation of sales is not deemed adequate, nor is it likely that, unless the company wrote policies in the District, investment in income-producing property or full ownership of such property without property management by employees of the insurance company would constitute sufficient nexus. Of course, the first step the District would have to take in devising a net income tax for insurance companies would be to change the present law which makes the premiums tax in lieu of all other taxes save the real estate tax.

Given the complexities inherent in defining especially the net income of life-insurance companies, the District would probably have to use the Federal definition of net taxable income as apportioned to the District. To do otherwise would entail very large enforcement and compliance costs. Even relying on the Internal Revenue Service for their insurance company audits would not avoid the administrative costs of screening the 600-plus tax returns.

Another problem associated with the taxation of insurance company net income is the retaliatory effect. At first glance, it does not seem that merely substituting a net income tax for a portion of the premiums tax would result in much retaliation by states which use the aggregate approach to calculating retaliatory taxes. For any one domestic company with a large net income, the total tax burden might increase. Thus the tax implications for all District companies should be studied in detail before such a change. This review might also reveal what would happen if any D.C.-chartered companies conducted substantial business in States using on the item-by-item method of computing retaliatory taxes.

Improving the equity of insurance company taxation by substituting a tax on net investment earnings for part of the premiums tax encounters many of these same problems. Massachusetts and Connecticut have experimented with a supplemental tax on insurance company net investment earnings. In addition to its premiums tax, Massachusetts currently taxes the gross investment income of domestic insurers at 1 percent. Until 1974, Connecticut taxed the premiums of all domestic companies at 2 percent and the worldwide interest and dividends of domestic nonlife companies at 3.5 percent. The total interest and dividends of domestic life companies were also taxed at 3.5 percent but 81 percent of this investment income from life insurance and annuity business was an allowable deduction. This deduction was in recognition of the fact that life companies are required by law to commit most of their investment income to the maintenance of policy reserves. Connecticut also permitted other deductions from interest and dividends, including earnings from Federal and Connecticut obligations and dividends from the stock of other Connecticut insurance companies.

As can be seen, the Connecticut investment tax discriminated greatly against domestic companies. The large tax burdens that resulted eventually led to the demise of the scheme and its replacement with a 10-percent tax on domestic companies' net income attributable to Connecticut. Eighty percent of this tax is allowed as a credit against the premiums tax for the smaller companies. If the Connecticut investment tax were enacted in the District, it would annually yield an estimated $1.7 million.

Taxing insurance company investment income on a subnational basis can be justified on the grounds that the nature of insurance industry investment is changing from the traditional investment in businesses operated by others. Now, large insurance companies are becoming full-owners and even managers of real estate developments. Although they pay no State income tax on their investment earnings, they are in direct competition with real estate developers and others who must pay income and franchise taxes on their investment earnings.

Apart from the administrative nexus difficulties associated with any tax on net, nonpremium insurance income, a tax on investment earnings encounters other problems. First of all, net investment income is not a good indicator of net income, the preferred measure of ability to pay. For any given year these earnings may be negative, and net income, positive. Second, an apportionment formula that is so designed to capture a sizable portion of the substantial real estate investment returns to the large companies in recognition of their increasingly important role in the local economy will fail to capture the dividends and interest earnings which dominate most insurance company investment income. In summary, a tax on net investment income either as a partial replacement for the premiums tax, or as a supplementary tax has too many drawbacks to deserve further consideration.

To replace the premiums tax completely with a tax on net insurance income would not only involve most of the problems mentioned above including revenue loss but would also cause unwarranted inter and intraindustry shifts in gains and losses. The shifts would probably be small since the District is a relatively small market area. It should be

remembered, though, that the premiums tax has been around a long time, and its effects have long been shifted forward or backward. The industry, the individual companies and the customers have adjusted to this tax. For these many reasons, complete replacement of the premiums tax with a tax on insurance company net income is not advisable at this time.

The same administrative and retaliatory complexities combined with potential revenue loss also indicate that at the present it is not advisable to substitute a net income tax for part of the premiums tax. Should the corporation and unincorporated business franchise taxes be raised in the future, additional, parallel assessments on insurance companies, might well come from a net income tax. Such a supplementary tax would better reflect the insurance companies' ability to pay taxes and, by including at least of investments earnings, a better measure of insurance company activity within the District.

AN ANALYSIS OF THE GROSS EARNINGS TAX ON FINANCIAL INSTITUTIONS IN THE DISTRICT OF COLUMBIA

(By Kenneth R. Biederman, Director of the Office of Economic Research, Federal Home Loan Bank, Washington, D.C.)

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All tables, commentary, and observations are those of the author alone with no implication of any of the aforementioned people or organizations.

I. Introduction

Financial institutions have been taxed under a gross earnings tax in the District of Columbia dating back to 1902. Unlike most states, the D.C. gross earnings tax is a doing business tax which is measured by the gross earnings of a financial institution rather than its income. Prior to 1949, national banks in the District of Columbia were subject to a 6-percent rate on their gross earnings whereas savings banks were taxed at a 4-percent rate. This was changed in 1949, so that prior to the Revenue Act of 1975 all commercial banks were taxed at 4 percent of gross earnings. Savings and loan associations historically have been taxed at 2 percent of their gross earnings primarily due to considerations surrounding the nature of the business rather than equity matters.

Since fiscal year 1976, commercial banks have been taxed at 6 percent of their gross earnings with savings and loan associations continuing to be taxed at 2 percent (with a single-year exception of 3 percent in fiscal year 1976).

Gross earnings for purposes of the D.C. gross earnings tax on financial institutions is defined as essentially gross receipts of the financial institution exclusive of certain eliminations and allowable deductions. Among the "eliminations" are interest and dividends received from obligations of the United States, its agencies and instrumentalities,

and interest and dividends received from obligations of state and local governments. Among the principal allowable deductions are interest paid to depositors (banks only) and operating expenditures for tangible commodities furnished to customers without charge.

This paper looks at what is a unique tax on financial institutions from several aspects within the context of equity between competing institutions, tax burden analysis, alternative tax systems, financial performance and stability, regulation, and the use of tax subsidies. We begin with a more detailed look at the evolution of the existing tax treatment of depository institutions in the District of Columbia.

II. A Brief History of the D.C. Gross Earning Tax on Financial Institutions

Financial institutions have been taxed under a gross earnings tax in the District of Columbia dating back to 1902.[1] Unlike most states, the D.C. gross earnings tax is a "doing business" tax which is measured by the gross earnings of a financial institution rather than its income.

Prior to 1949, national banks in the District of Columbia were subject to a 6 percent rate on their gross earnings whereas savings banks were taxed at a 4 percent rate. The rationale for this difference was that incorporated savings banks in the District were the depositories of the savings of poor people and, therefore, should not be "excessively taxed." [2] This was ruled as unconstitutional discrimination against nationally chartered commercial banks so that subsequent to 1949, all commercial banks were taxed at 4 percent of their gross earnings. Nonetheless, a similar sort of rationale was applied to building associations as well. The argument used was that since shareholders in building associations are people unable to purchase homes for themselves without the aid of such associations, D.C. building associations should be taxed at 2 percent annually rather than the 4 percent rate assessed commercial banks.[3] The rate differential continues to exist; however as is developed later, the reason for the continued differential seems to center more around questions of tax equity rather than issues as to which financial institution is or is not serving the populus of the District.

Gross earnings for purposes of the D.C. gross earnings tax on financial institutions is defined as essentially gross receipts of the financial institution exclusive of certain eliminations and allowable deductions. Among the "eliminations" are interest and dividends received from obligations of the United States, its agencies and instrumentalities, and interest and dividends received from obligations of state and local governments. Among the principal allowable deductions are interest paid to depositors (banks only) and operating expenditures for tangible commodities furnished to customers without charge. The foundation for disallowing interest paid to depositors for savings and loan association is that, unlike commercial banks, the income statements of

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[1] For a thorough discussion and analysis of the evolution of the gross earnings tax, see a memorandum dated November 29, 1976, from E. C. Mobley, Jr., and Sharlene G. Szulman to Belva Newsome regarding "D.C. Bank and Building Association Net Income Tax," D.C. Project, Georgetown University Law Center.

[2] *Ibid.*, p. 7.

[3] *Ibid.*, p. 10.

associations do not show interest paid to savers as an operating expense. Accordingly from an equity standpoint, it is argued that interest and dividends paid to depositors of savings and loan associations should not be allowed as a deduction in determining the base for the D.C. gross earnings tax.[4]

Under the provisions of the Revenue Act of 1975, the gross earnings tax rate on savings and loan associations was increased in fiscal year 1976 from 2 percent to 3 percent, and the rate on commercial banks was increased from 4 percent to 6 percent. At the same time, a step-up in payment schedules occurred. Prior to the Revenue Act of 1975, the tax liabilities of financial institutions were paid in two installments in September and March after the close of the fiscal year in which the tax liability occurred. Under the 1975 Revenue Act provisions, one-third of fiscal year 1976 taxes were paid in March of 1976, with the remaining two-thirds paid in equal installments in September 1976 and March 1977. Under this act, prepayments of one-sixth each of a fiscal year's tax liability would be prepaid in September and March of that fiscal year with the remaining two-thirds being paid in equal installments in the September and March following the close of the fiscal year. However under the Revenue Act of 1976, the 3-percent rate on the gross earnings of savings and loan associations enacted in the Revenue Act of 1975 was reduced again to 2 percent, and in so doing negated the prepayment provisions for savings and loan associations. No such changes were legislated for commercial banks under the Revenue Act of 1976.

Beginning in 1978 and thereafter, payment of tax liability incurred under the gross receipts tax by financial institutions in the District will be advanced further with full payment for tax liability incurred in the fiscal year just ended being made in July. Commercial banks will continue to make prepayments of one-sixth each in September and March for a given fiscal year with the remaining 4 percent (two-thirds) paid in July at the close of the fiscal year. The entire tax liability of savings and loan associations will be paid in July.

III. Taxation of Depository Intermediaries in the 50 States [5]

Unlike the District, most States levy some form of net income tax on at least one form of financial institution. Table 1 shows those states which as of 1975 applied some form of net income tax to either commercial banks or savings and loan associations, or both. Most state income taxes on financial institutions take the form of an excise (or franchise) tax on doing business measured by either some state-defined net income base or a modified net income base as defined for federal income tax purposes. Table 2 shows a breakout of those states which apply net income taxes to either or both commercial banks and savings and loan associations by an excise tax as measured by net income, or by a direct net income tax.

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[4] *Ibid.*, pp. 12–13.

[5] For a thorough analysis on state and local doing-business taxes on out-of-state financial depositories, see the Committee on Banking, Housing, and Urban Affairs, U.S. Senate, State and Local "Doing Business" Taxes on Out-of-State Financial Depositories, Report of a Study by the Advisory Commission on Intergovernmental Relations, U.S. Government Printing Office, Washington, D.C., May 1975.

TABLE 1.—STATES WHICH APPLY NET INCOME TAXES TO COMMERCIAL BANKS AND/OR SAVINGS AND LOAN ASSOCIATIONS (1975) [1]

Alabama	Kansas	North Dakota
Alaska	Maine	Oklahoma
Arizona	Maryland	Oregon
Arkansas	Massachusetts	Pennsylvania
California	Michigan	Rhode Island
Colorado	Minnesota	South Carolina
Connecticut	Missouri	South Dakota
Delaware	Montana	Tennessee
Florida	Nebraska	Utah
Hawaii	New Hampshire	Vermont
Idaho	New Jersey	Virginia
Illinois	New Mexico	Wisconsin
Indiana	New York	
Iowa	North Carolina	

[1] Source: Committee on Banking, Housing, and Urban Affairs, U.S. Senate, "State and Local "Doing Business" Taxes on Out-of-State Financial Depositories," report of a study by the Advisory Commission on Intergovernmental Relations, U.S. Government Printing Office, Washington, D.C., May 1975, p. 252.

TABLE 2.—STATES WHICH APPLY NET INCOME TAXES TO COMMERCIAL BANKS AND/OR SAVINGS AND LOAN ASSOCIATIONS, BY TYPE OF TAX (1975) [1]

EXCISE TAX (MEASURED BY NET INCOME)		
Alabama	Massachusetts	Oklahoma
Alaska	Michigan	Oregon [2]
California [2]	Minnesota [2]	Pennsylvania [4]
Connecticut	Missouri [2]	Rhode Island
Florida	Montana [2]	South Carolina [5]
Hawaii	Nebraska [2]	South Dakota
Idaho [2]	New Jersey	Tennessee
Iowa	New Mexico	Utah [2]
Kansas	New York	Vermont
Maine [2]	North Carolina [3]	Wisconsin [2]
Maryland	North Dakota	
DIRECT NET INCOME TAX		
Arizona	Delaware	New Hampshire
Arkansas	Illinois	Virginia
Colorado	Indiana	

[1] Source. State and Local "Doing Business" Taxes, op. cit., p. 258.
[2] This State has a "dual" or "second structure" tax, i.e., a direct tax designed to supplement an excise tax measured by net income, in order to reach interstate business income that might not be included within the base of the excise tax because of the "doing business" jurisdictional requirements of an excise tax.
[3] North Carolina uses an excise tax for building and loan associations, and a direct tax for banks.
[4] Pennsylvania applies an excise tax measured by net income to mutual thrift institutions without capital stock. Banks and other financial institutions exempt from the excise tax and a "property" tax on taxable income are subject to a tax on capital stock, paid-in surplus, and undivided profits per share.
[5] South Carolina applies an excise tax to banks and financial institutions other than savings and loan associations, but levies a special direct tax on savings and loan associations and cooperative banks.

The choice as to which base is used involves two major legal considerations which are particularly relevant to financial institutions. Under an excise tax, a state may include interest on federal obligations in the net income base whereas such interest income must be omitted from the base of a direct tax. A direct income tax, unlike an excise tax, may be levied on an out-of-state corporation which has a taxable nexus within the taxing state. Historically there has been no substantial experience in the United States with state taxation of out-of-state commercial banks, mutual savings banks, and savings and loan associations. Until recently, there has been a moratorium on the interstate taxation of financial institutions.[6]

Because of this distinction, most states apply a direct income tax

[6] The moratorium expired in September 1976.

on non-financial corporations and an excise tax on financial institutions.[7] In order to maximize revenues, several states use a "second structure" or dual system in which direct and excise taxes operate side-by-side, usually with the provision that a corporation pay the higher of the alternative levies. (See Table 2.) A few states are inhibited by state constitutional provisions from imposing an excise tax.

TABLE 3.—CORPORATE TAXES ON FINANCIAL INSTITUTIONS, BY STATE AND BY TYPE OF TAX

State	Type of tax	Comments
Alabama	Excise tax measured by net income	State defined base; includes interest on all governmental obligations; rate equals 6 percent: Federal income taxes paid or accrued are deductible.
Alaska	License fee	Based on net income as defined under Federal income tax; interest on all governmental obligations taxable; rate equals 7 percent; own and other State income taxes deductible.
Arizona	Direct net income tax	State defined base; interest on Federal and Arizona governmental obligations exempt; rate graduated from 2.5 to 10.5 perdent; own and other State income taxes deductible.
Arkansas	do	Modified Federal income tax base; includes interest on other State obligations only; rate graduated from 1 to 6 percent; other State income taxes deductible.
California	Excise tax measured by net income	State defined base; interest on all governmental obligations taxable; rate equals 13 percent; income taxes not deductible.
Colorado	Direct net income tax	Modified Federal income tax base; interest on Federal obligations exempt; interest on own and other State obligations taxable unless exempt by special statute; rate equals 5 percent; income taxes paid to other States and subdivisions deductible.
Connecticut	Excise tax measured by net income	Modified Federal income tax base; interest on all governmental obligations taxable; rate equals 8 percent of net income or 3.2 percent of interest/dividends credited to depositors; own and other State/local income taxes deductible.
Delaware	Direct net income tax	Modified Federal income tax base; interest on other State obligations taxable; rate equals 7.2 percent; other State income taxes deductible.
Florida	Excise tax measured by net income	Modified Federal income tax base; interest on governmental obligations taxable; rate equals 5 percent; other State income taxes deductible.
Georgia	Shares tax	Banks and S. & L.'s subject to a share tax by local governments based on net worth.
Hawaii	Excise tax measured by net income	Modified Federal income tax base; interest on all governmental obligations taxable; rate equals 11.7 percent; Federal and own income taxes deductible.
Idaho	do	Modified Federal income tax base; includes interest on governmental obligations, with exceptions; rate equals 6.5 percent; income taxes not deductible.
Illinois	Direct net income tax	Modified Federal income tax base; excludes interest on Federal obligations; rate = 4 percent; own and other State income taxes deductible.
Indiana	(Supplemental) net income tax and/or direct tax on adjusted gross income.	Modified Federal income tax base; excludes interest on governmental obligations; rate = 3 percent of State source adjusted gross income; where applicable, 1.7 percent of gross income; income taxes not deductible.
Iowa	Excise tax measured by net income	Modified Federal income tax base; excludes interest on State obligations; rate graduated from 6 to 10 percent; income taxes deductible.
Kansas	do	Modified Federal income tax base; interest on governmental obligations taxable except certain own obligations; rate graduated from 4.5 to 7 percent; income taxes not deductible.
Kentucky	Shares tax	Shares tax paid to county in which institution located in lieu of other State and local taxes.
Louisiana	do	Shares and property taxes only.
Maine	Excise tax measured by net income	Modified Federal income tax base; includes interest on all governmental obligations; rate graduated from 5 to 7 percent; own and other State income taxes deductible.
Maryland	do	Modified Federal income tax base; includes interest on all governmental obligations and interest paid to depositors (S. & L.'s only); rate 7 percent for banks, and 3/4 percent for S. & L.'s plus a franchise tax of 0.013 percent of savings deposits; income taxes nondeductible.

[7] Interest on U.S. obligations accounted for 10.4 percent of gross operating income of all U.S. insured commercial banks in 1976 and 12.8 percent of the gross operating income of commercial banks in the District of Columbia. See Table 6.

TABLE 3.—CORPORATE TAXES ON FINANCIAL INSTITUTIONS, BY STATE AND BY TYPE OF TAX—Continued

State	Type of tax	Comments
Massachusetts	Exceise tax measured by net income/net operating income.	Modified Federal income tax base for banks, State defined base for S. & L.'s; includes interest on all governmental obligations; rate = 11.4 percent for banks, rate for S. & L.'s = 1 percent of net operating income, plus 0.2 percent of average deposits plus share capital, plus a 14-percent surtax; income taxes nondeductible.
Michigan	Excise tax measured by net income	Modified Federal income tax base; interest on own obligations exempt; rate = 9.7 percent; income taxes nondeductible.
Minnesota	do	State defined base; interest on governmental obligations taxable; rate = 12 percent less a $500 credit; Federal and other income taxes deductible.
Mississippi	Shares tax	Shares tax paid to county in which institution located.
Missouri	Direct income/excise tax measured by net income.	State defined income tax base; interest on governmental obligations taxable; rate = 7 percent; Federal and other State income taxes deductible.
Montana	Excise tax measured by net income	Modified Federal income tax base; own State obligations exempt; rate equals 6.75 percent; own and other State income taxes deductible.
Nebraska	do	Modified Federal income tax base; own State obligations exempt; rate equals 2.75 percent; own and other State income taxes deductible.
Nevada	No corporate tax	
New Hampshire	Direct corporate tax on gross business profits.	Modified Federal income tax base; interest on government obligations exempt; rate equals 7 percent; own and other State income taxes deductible.
New Jersey	Excise tax measured by net income	Modified Federal income tax base; interest on Federal and own State obligations tax exempt; rate equals 5 percent; income taxes nondeductible.
New Mexico	do	Modified Federal income tax base; interest on governmental obligations taxable; rate equals 6 percent; own and other State income taxes deductible.
New York	Excise tax measured by net income, capital, and dividends/interest.	Modified Federal income tax base; interest on governmental obligations taxable; rate equals 8 percent of net income, or 0.16 percent of capital for banks—2 percent of 1st 3.5 percent of interest/dividends credited to depositors for S. & L.'s; own and other State income taxes deductible.
North Carolina	Direct net income tax/excise tax measured by net income.	Modified Federal income tax base; interest on own and Federal obligations exempt, rate equals 6 percent for banks, 7.5 percent for S. & L.'s; income taxes nondeductible.
North Dakota	Excise tax measured by net income	Modified Federal income tax base; interest on all governmental obligations taxable; rate equals 5 percent plus a 2-percent surcharge; Federal income taxes deductible.
Ohio	Shares tax	
Oklahoma	Excise tax measured by net income	Modified Federal income tax base; interest on own State obligations exempt; rate equals 4 percent; income taxes nondeductible.
Oregon	do	State defined base (gross income); all interest on governmental obligations taxable except own State obligations issued after 1961; rate equals 8 percent; income taxes nondeductible.
Pennsylvania	Excise tax measured by net income/shares tax.	State defined base; all interest on governmental obligations taxable; rate equals 11.5 percent for mutual S. & L.'s; banks and stock S. & L.'s pay a shares tax; income taxes deductible.
Rhode Island	Direct tax on income or net worth; excise tax measured by net income.	State defined base; interest on all governmental obligations taxable under excise tax; rate equals 8 percent under excise tax (for banks), 8 percent or 40 cents per $100 net worth for S. & L.'s; Federal and other income taxes deductible for banks, other income taxes may be deductible for S. & L.'s depending on the base taxed.
South Carolina	Direct tax on net income; excise tax measured by net income.	Modified Federal income tax base; interest on Federal and own obligations exempt for S. & L.'s only; rate equals 4.5 percent for banks, 8 percent for S. & L.'s; income taxes nondeductible for S. & L.'s deductible for banks.
South Dakota	Excise tax measured by net income	State defined base; interest on all governmental obligations taxable; rate equals 5.5 percent; Federal and other State income taxes deductible.
Tennessee	do	State defined base; interest on all governmental obligations taxable; rate equals 6 percent; own and other State income taxes deductible.
Texas	Net worth tax	No corporate income-based tax.
Utah	Excise tax measured by net income	State defined base; interest on own State obligations exempt; rate equals 6 percent; Federal and other State income taxes deductible.

TABLE 3.—CORPORATE TAXES ON FINANCIAL INSTITUTIONS, BY STATE AND BY TYPE OF TAX—Continued

State	Type of tax	Comments
Vermont	do	Modified Federal income tax base; interest on own and other State obligations exempt; rate graduated from 5 to 7.5 percent; own and other State income taxes deductible.
Virginia	Direct net income tax/shares tax	Modified Federal income tax base; interest on own and other State obligations exempt; rate equals 6 percent for S. & L.'s, banks pay shares tax; income taxes nondeductible.
Washington	Gross income tax	State defined base; rate equals 1 percent of gross income generated in-state; interest on: 1st mortgages on residential property, own obligations, and of the Federal Government deductible.
West Virginia	Capital stock tax/gross receipts tax	Rate is 1.15 percent for financial institutions; interest on governmental obligations and 1st mortgages on residential property deductible.
Wisconsin	Excise tax measured by net income	State defined base; interest on all governmental obligations taxable; rate graduated from 2.3 to 7.9 percent; income taxes deductible, Federal taxes deductible up to 10 percent of net income.
Wyoming	Excise tax measured by total capital	

Source: Committee on Banking, Housing, and Urban Affairs, U.S. Senate, "State and Local 'Doing Business' Taxes on Out-of-State Financial Depositories," report of a study by the Advisory Commission on Intergovernmental Relations, U.S. Government Printing Office, Washington, D.C., May 1975, app. B, tables 1, 3, 8.

Table 3 gives a state-by-state breakdown of corporate taxes on financial institutions, by type of tax, with summary statements as to rates and deductibility of interest on securities and income taxes. The applicable rates for those 40 states which levy taxes on financial institutions as measured by net income range from 1–13 percent, with the bulk of the rates falling between 5–9 percent. Two-thirds of the states use a modified federal net income definition of the tax base, with additions of such items as interest on in-state or out-of-state municipal securities, and state-local income taxes. The remaining states begin with a gross income/gross receipts definition and designate specific deductions, arriving at a state-defined net income base.[8] (See Table 3 for details.)

Of the 40 states shown in Tables 1 and 2 which impose one form or another of corporate net income tax on one or more classes of financial institutions, about two-thirds include interest on federal securities in the tax base; the others exempt such interest. As would be expected, taxation of interest on U.S. obligations is the rule where an excise tax is used. Exemption is required by law in all states where there is a direct tax on net income. A large majority of states include interest on securities of other states as well as their own subdivisions in the income tax base of financial institutions. Thirty-five of the 40 states shown in Table 2 include interest received on governmental obligations of other states in the income tax base of financial institutions. Twenty-five states provide generally for including in taxable income any interest on obligations of the taxing state and its subdivision.[9]

As to the deductibility of federal and state income taxes, two-thirds of the states shown in Table 2 do not permit deduction of the federal income tax in determining the base for the state tax. Sixteen states do not permit income taxes paid to other states (or their subdivisions) as deductions from their tax base. Two-thirds of these states do not permit

[8] Committee on Banking, Housing, Urban Affairs, op. cit., pp. 262–63.
[9] *Ibid.*, p. 267.

deduction of income taxes paid to the taxing state or to its subdivisions.[10] As with any of these considerations, the combinations within any given state or set of states vary and the reader is again referred to Table 3 for specifics as to the combination of these provisions for any given state.

This leaves 10 states and the District of Columbia which do not impose a corporate net income tax on one or more forms of financial institution.[11] Five states have a shares or net worth tax under their local property taxes: Georgia, Kentucky, Louisiana, Mississippi, and Ohio. West Virginia has a general tax on the gross receipts of all corporations as well as a capital stock tax on financial institutions. Nevada imposes no "doing business" taxes on corporations. The State of Washington applies a general business and occupation tax on its share of the gross income of the financial institution. Interest on first mortgages on residential property are deductible from this base. Texas imposes a general tax on a prorated portion of the capital surplus and undivided profits of a financial institution. Wyoming has a tax on capital property and assets located and employed within the State; and the District of Columbia taxes the gross income of depositories as described above.[12]

As to the impact of these many and diverse tax systems, Table 4 shows effective tax rates measured by state (and local) income taxes as a percent of the economic income of insured commercial banks and savings and loan associations in the 50 states and the District of Columbia for the years 1975 and 1976.[13] As shown therein, the effective rates of state and local income taxes range from 0 to over 15 percent for commercial banks in 1975, and 0–13 percent in 1976. The range for savings and loan associations runs somewhat higher, from 0 to 41 percent (in the case of Rhode Island).

Although regulatory data provide the only single source on a state-by-state basis of state income tax burdens on financial institutions, such calculations as are presented in Table 4 must be viewed with the following caveats in mind. First, the tax data employed in these calculations are "provisions for tax" rather than actual tax burdens. As such, changes in provisions due to accounting considerations and/or in anticipation of tax changes may cause significant fluctuations in taxes from year-to-year, or in any given year leading to what would be abnormally high or low effective rates. This seems to be the case for savings and loan associations in Rhode Island, for example.

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[10] *Ibid.*, p. 269.

[11] This is not to say that among those states listed in Table 2 one or more form of financial institution is not subject to a tax other than a net income tax. Virginia, for example, levies a net income tax on savings and loan associations, but a tax only on the shares of stock owned by stockholders of bank and trust companies.

[12] *Ibid.*, pp. 250–51.

[13] For these purposes and those of ensuing calculations, the measure of economic income as used by the U.S. Treasury Department and other government agencies, and as is most commonly accepted in effective tax rate calculations for financial institutions, is employed here; namely, taxable income as defined for federal income tax purposes plus bad debt deduction allowances in excess of loss, plus tax-exempt interest, plus net operating loss carryovers. Although perhaps short of a purist's concept, such measures of economic income in the case of financial institutions provides a common base within existing data limits for the comparison of changing effective tax rates both over time and between financial institutions. Data for 1976 of savings and loan associations, by state, are not yet available.

TABLE 4.—EFFECTIVE TAX RATES, STATE-LOCAL INCOME TAXES AS A PERCENT OF ECONOMIC INCOME, INSURED COMMERCIAL BANKS AND SAVINGS AND LOAN ASSOCIATIONS; 50 STATES AND THE DISTRICT OF COLUMBIA 1975–76

[In percent]

State	Effective tax rate [1]			
	Commercial banks		Savings and loan associations	
	1975	1976	1975	1976 [2]
Alabama	3.2	4.1	2.7	
Alaska	3.9	4.1	(3)	
Arizona	4.6	2.2	.5	
Arkansas	.7	.6	1.8	
California	9.6	10.0	1.2	
Colorado	2.0	1.5	1.2	
Connecticut	11.5	9.4	18.1	
Delaware	1.7	2.0	2.5	
District of Columbia	4.4	6.0	22.0	
Florida	2.7	3.2	2.5	
Georgia	(4)	.4	.3	
Hawaii	8.4	11.7	5.8	
Idaho	5.4	7.0	3.2	
Illinois	1.1	1.2	.4	
Indiana	1.2	1.7	18.8	
Iowa	3.3	4.1	2.4	
Kansas	4.4	5.3	5.6	
Kentucky	(4)	(4)	.6	
Louisiana	.2	(4)	(4)	
Maine	1.1	1.7	3.2	
Maryland	4.7	3.6	5.6	
Massachusetts	10.0	13.3	28.0	
Michigan	4.5	.9	3.0	
Minnesota	10.8	11.2	5.1	
Mississippi	(4)	(4)	(4)	
Missouri	1.9	2.1	1.3	
Montana	1.9	2.0	5.4	
Nebraska	1.7	1.7	1.3	
Nevada	0	0	0	
New Hampshire	.8	.5	3.6	
New Jersey	.1	1.5	1.7	
New Mexico	5.4	5.5	2.2	
New York	15.2	10.4	12.4	
North Carolina	.8	.7	6.1	
North Dakota	3.6	4.3	3.9	
Ohio	(4)	(4)	(4)	
Oklahoma	1.9	2.1	35.2	
Oregon	7.6	6.4	7.7	
Pennsylvania	.6	.7	8.8	
Rhode Island	6.3	8.0	41.1	
South Carolina	3.8	4.1	2.7	
South Dakota	4.0	4.1	3.4	
Tennessee	4.4	3.4	6.1	
Texas	(4)	(4)	(4)	
Utah	3.4	3.6	.3	
Vermont	1.5	1.7	4.1	
Virginia	(4)	(4)	2.5	
Washington	(4)	(4)	1.2	
West Virginia	.2	.2	1.2	
Wisconsin	7.0	7.4	5.5	
Wyoming	(4)	(4)	(4)	

[1] Provision for income tax as percent of net income before income taxes; includes interest on all governmental obligations.
[2] Not yet available.
[3] Not available.
[4] Less than 0.1 percent, generally due to financial institution in that State not subject to an income tax.

Source: FDIC, "Assets and Liabilities of Commercial and Mutual Savings Banks," December 31 reports; FHLBB "Combined Financial Reports."

In some states, state and local tax burdens may be reported as other operating expense rather than provision for tax. This is the case in Virginia, for example, where banks have a share tax, and is also true for banks in the District of Columbia where several banks report for regulatory purposes their gross earnings tax not as an income tax but rather as other operating expense.

Nonétheless, it is evident from Table 4 in conjunction with the rate structures as set forth in Table 3 that a very wide range of state and local tax burdens exists on financial institutions, not only among the various states but frequently within states as well. In the case of commercial banks, the high burden tax states appear to be: California, Connecticut, Hawaii, Massachusetts, Minnesota, New York, and Rhode Island.[14] Among savings and loan associations, the high burden tax states show up as: Connecticut, the District of Columbia, Indiana, Massachusetts, New York, Oklahoma, and Rhode Island. A cursory review of Table 3 indeed leads one to the belief that these would be high tax burden states along with perhaps one or two others.

IV. A Financial Perspective on Commercial Banks and Savings and Loan Associations in the District of Columbia

Any study which deals with issues such as taxation and regulation should be prefaced by a financial overview of the institutions involved. Taxation does not take place in a vacuum. Taxes, like regulation, affect the financial conduct of individuals and corporations alike, often in undesired ways. It is important to understand the financial nature of the industry involved—what is it that the organizations do, how do they differ and compare with existing institutions within the same geographical boundaries and with competing institutions elsewhere? Do they produce products which are socially desirable or undesirable and are they performing at economically and socially optimal levels? Such information provides for a better understanding of the role of taxation in the financial performance of a given industry as well as serves as background knowledge behind any restructuring of existing tax systems.

Table 5 presents certain selected balance sheet items for all insured banks and savings and loan associations within the U.S., Maryland, Virginia, and the District of Columbia for the years 1970 and 1976. In 1976, the assets of the commercial banking industry in the United States increased to just over a trillion dollars, an increase of about 75 percent in six years. Assets of insured commercial banks in Maryland stood at $11.2 billion at year-end 1976; $17.1 billion for Virginia banks. By comparison, assets of banks in the District of Columbia in 1976 were over $4.5 billion compared to $3.2 billion in 1970. By year-end 1976, there were 14,400 insured commercial banks in the United States, an increase of nearly 900 from six years before. The number of insured commercial banks in Maryland remained constant during this period, increased by 50 in Virginia, and by 2—from 14 to 16—in the District of Columbia.

By comparison, savings and loan associations have about 40 percent the assets of commercial banks with year-end assets in 1976 of all U.S. insured savings and loan associations at around $380 billion. Assets of insured savings and loan associations in Maryland in 1976 were $5.8 billion compared to $5.6 billion in Virginia, and nearly $4 billion in the District of Columbia.[15] In terms of numbers of associations, sav-

[14] Given figures which are presented in ensuing tables, one should add the District of Columbia to the list although this does not come out in the regulatory data as presented here.

[15] The figures for Maryland do not include MSSIC insured associations. In 1976, there were 135 such associations out of a state total of 206. However, the MSSIC insured associations held only 20 percent of total assets of all Maryland savings and loan associations.

ings and loans are about one-third that of commercial banks, with some 4,000 insured associations as of year-end 1976, down from 4,400 in 1970. Insured associations in Maryland dropped over this six-year period from 84 to 71, but increased in Virginia from 64 to 76. The number of associations in the District of Columbia decreased from 21 to 16.

As indicated in Table 5, the asset and liability structures of commercial banks vis-à-vis savings and loans differ significantly. The assets of savings and loan associations are predominantly residential mortgage loans whereas investments of commercial banks are more in securities, and commercial and industrial loans. This is primarily due to regulation as well as the historical evolution of the two industries. On the liability side, commercial banks source their funds from both demand and time deposits, splitting the two sources of funds on about a 45/55 percent basis. Savings and loan associations are not permitted by regulation to hold demand deposits; accordingly, they source 90 percent of their funds from savings deposits and borrowings through the Federal Home Loan Bank system.

Comparing commercial banks in the District of Columbia with banks elsewhere indicates that banks in the District make somewhat more mortgage loans secured by residential properties than banks in the U.S. as a whole, although such loans contribute less to the portfolios of banks in the District than they do to those in either Maryland or Virginia. Interestingly, banks in the District depend far more heavily on demand deposits as sources of funds than do banks in either Maryland or Virginia, whose liability structures are more like those of commercial banks nationwide. It is not entirely clear why this is the case although such a large dependence on what is normally considered short term, or "hot," money may impact the nature of long term lending patterns of banks in the District. One final note: Banks in the District have a somewhat higher net worth ratio as measured by reserves in capital accounts to assets than do banks in Maryland, Virginia, or the U.S. There can be many reasons for this, not the least of which has been the relatively slow rate of growth which banks in the District have experienced over the past six to seven years.

Looking at savings and loan associations, we see that the asset structure of savings and loans in the District pretty much matches that of savings and loans in Virginia and Maryland with all three holding mortgage loans as a percent of assets somewhat above the national average. At least in the case of District associations, this can partially be accounted for by the fact that effective mortgage yields in the Washington metropolitan area have been above the national average throughout the course of the 1970s. On the liability side, District S&Ls have a significantly more healthy net worth position than do S&Ls in the surrounding areas, particularly those in Virginia, and in the nation as a whole. Again, perhaps a good portion of this can be attributed to the relatively slow growth of the savings and loan industry in the District of Columbia.

Table 6 presents some figures on various income and expense items of commercial banks and savings and loan associations, again on a comparative basis among all U.S. insured banks and S&Ls, as well as those in Virginia, Maryland, and the District of Columbia. Certain

key items stand out in viewing these figures over the period 1970 to 1976. For commercial banks, there has been a significant growth in their operating expense which has been primarily due to increases in interest paid on deposits. This has been true in the District as well as throughout Maryland, Virginia, and the nation. The ratio of operating expense to gross operating income, while increasing in the District, has been consistently lower than that of banks in the neighboring States and throughout the nation. However, some of the competitive advantage gained here by commercial banks in the District through lower operating expenses is given up in terms of relatively higher effective tax burdens.[16]

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[16] Recall the earlier comments about the regulatory data "provision for income taxes," particularly for commercial banks in the District. As ensuing data indicate, the ratio of actual tax burdens to operating income for commercial banks in the District is actually higher than as shown in Table 6(A).

TABLE 5.—SELECTED BALANCE SHEET ITEMS, INSURED COMMERCIAL BANKS AND SAVINGS AND LOAN ASSOCIATIONS; ALL UNITED STATES, MARYLAND, VIRGINIA, AND DISTRICT OF COLUMBIA (1970, 1976)

Item	Commercial banks[1]															
	All U.S. insured				Maryland				Virginia				District of Columbia			
	1970		1976[2]		1970		1976		1970		1976		1970		1976	
	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets
Cash and balances	$92,708	16.2	$129,564	12.9	$896	15.0	$1,140	10.1	$1,181	12.7	$1,760	10.3	$571	17.7	$575	12.6
Investment securities	141,259	24.7	233,626	23.3	1,571	26.3	2,471	21.9	2,365	25.5	4,257	24.9	874	27.1	1,216	26.6
Loans secured by residential properties	44,951	7.8	84,720	8.4	627	10.5	1,481	13.1	1,017	11.0	2,350	13.7	247	7.7	483	10.5
Other loans[3]	296,064	51.7	520,162	51.8	3,092	51.8	6,454	57.3	5,209	56.2	9,547	55.9	1,574	48.8	2,295	50.1
Total assets[4]	572,682	100.0	1,003,486	100.0	5,966	100.0	11,265	100.0	9,269	100.0	17,092	100.0	3,223	100.0	4,580	100.0
Demand deposits	246,168	43.0	332,090	33.1	2,868	48.1	3,776	33.5	3,472	37.5	5,303	31.0	1,717	53.3	2,058	45.0
Time deposits	233,006	40.7	492,477	49.1	2,341	39.2	5,696	50.6	4,552	49.1	9,551	55.9	1,134	35.2	1,827	39.9
Borrowings	19,149	3.3	75,307	7.5	103	1.7	741	6.6	189	2.0	552	3.2	45	1.4	206	4.5
Total liabilities[4]	523,965	91.5	926,336	92.3	5,446	91.3	10,359	92.0	8,505	91.8	15,679	91.7	2,942	91.3	4,146	90.5
Reserves and capital accounts	48,714	8.5	83,260	8.3	520	8.7	906	8.0	763	8.2	1,413	8.3	281	8.7	435	9.5
Number of banks	13,511		14,396		114		113		233		283		14		16	

Footnotes at end of table.

TABLES 5.—SELECTED BALANCE SHEET ITEMS INSURED COMMERCIAL BANKS AND SAVINGS AND LOAN ASSOCIATIONS; ALL UNITED STATES, MARYLAND, VIRGINIA, AND DISTRICT OF COLUMBIA (1970, 1976)

	Savings and loan associations [5]															
	All U.S. insured				Maryland [6]				Virginia				District of Columbia			
	1970		1976 [2]		1970		1976		1970		1976		1970		1976	
	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets	Millions	Percent of assets
Cash and deposits eligible for liquidity	$2,951	1.7	$3,737	1.0	$54	2.0	$74	1.3	$45	2.4	$48	0.8	$33	1.3	$30	0.8
Mortgage loans and contracts	144,999	85.0	315,288	82.6	2,406	84.8	4,980	85.7	1,642	86.6	4,821	86.3	2,185	88.2	3,509	87.9
Other loans	1,918	1.1	8,062	2.1	39	1.4	59	1.0	17	.9	82	1.5	10	.4	21	.5
Total assets [4]	170,538	100.0	381,671	100.0	2,837	100.0	5,812	100.0	1,895	100.0	5,584	100.0	2,477	100.0	3,991	100.0
Savings accounts	141,620	83.0	326,691	85.6	2,343	82.6	5,001	86.0	1,651	87.1	4,882	87.4	2,068	83.5	3,338	83.6
Borrowings	10,812	6.3	16,041	4.2	149	5.2	194	3.3	64	3.4	242	4.3	1,377	55.6	221	5.5
Total Liabilities [4]	158,662	93.0	360,391	94.4	2,643	93.2	5,460	93.9	1,763	93.0	5,306	95.0	2,300	92.9	3,721	93.2
Net worth	11,875	7.0	21,279	5.6	194	6.8	351	6.0	131	6.9	278	5.0	177	7.1	270	6.8
Number of associations	4,365	--------	4,044	--------	[6] 84	--------	71	--------	64	--------	76	--------	21	--------	16	--------

[1] FDIC, "Assets and Liabilities of Commercial and Mutual Savings Banks," Dec. 31 reports; FDIC insured banks only.

[2] May differ with published figures in certain categories in that effective Mar. 31, 1976, certain reserves and unearned income items are no longer reported as liabilities and have been netted against assets. For consistency with previous data, these items are treated in 1976 as prior to March 1976.

[3] Commercial and industrial loans, installment loans to individuals, farm loans, etc.

[4] Totals are not sum of the individual entries above since they are "selected items" from the balance sheets.

[5] FHLBB, "Combined Financial Statements," FSLIC insured associations only.

[6] Does not include MSSIC associations. In 1976, there were 135 such associations out of a State total of 206. However, MSSIC associations had only 20 percent of mortgages and assets of Maryland S. & L.'s.

TABLES 6.—SELECTED INCOME-EXPENSE ITEMS INSURED COMMERCIAL BANKS AND SAVINGS AND LOAN ASSOCIATIONS; ALL UNITED STATES, MARYLAND, VIRGINIA, AND DISTRICT OF COLUMBIA (1970, 1976)

Items	Commercial banks[1]															
	All U.S. insured				Maryland				Virginia				District of Columbia			
	1970		1976		1970		1976		1970		1976		1970		1976	
	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income
Gross operating income	$34,716	100.0	$80,358	100.0	$369	100.0	$803	100.0	$595	100.0	$1,271	100.0	$199	100.0	$326	100.0
Interest on U.S. obligations	3,767	10 9	8,360	10.4	48	13.2	78	9.7	63	10.6	127	10.0	31	15.9	42	12.8
Interest on State/local obligations	2,620	7.5	5,114	6.4	23	6.3	63	7.9	45	7.6	100	8.3	11	5.8	22	6.7
Operating expense[2]	27,588	79.5	70,421	87.6	270	73.2	701	87.2	480	80.7	1,131	89.0	147	73.8	269	82.5
Interest on deposits	10,483	30.2	34,882	43.4	91	24.6	292	36.3	200	33.7	510	40.1	53	26.9	106	32.7
Interest on borrowings	1,865	5.4	3,969	5.0	7	2.0	28	3.4	11	2.0	26	2.0	3	1.8	12	3.7
Provision for income taxes[3]	1,863	5.4	1,860	2.3	37	10.1	16	2.0	24	4.0	12	0.9	21	10.6	19	5.8
Net income[4]	4,837	13.9	7,865	9.8	61	16.5	87	10.9	79	13.4	131	10.3	31	15.8	41	12.6

Footnotes at end of table.

TABLES 6.—SELECTED INCOME-EXPENSE ITEMS INSURED COMMERCIAL BANKS AND SAVINGS AND LOAN ASSOCIATIONS; ALL UNITED STATES, MARYLAND, VIRGINIA, AND DISTRICT OF COLUMBIA (1970, 1976)

	Savings and loan associations [5]															
	All U.S. insured				Maryland				Virginia				District of Columbia			
	1970		1976		1970		1976		1970		1976		1970		1976	
	Millions	Percent of gross operatng income	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income	Millions	Percent of gross operating income
Gross operating income	$10,755	100.0	$28,217	100.0	$168	100.0	$415	100.0	$116	100.0	$417	100.0	$147	100.0	$281,440	100.0
Interest on mortgage loans and contracts	9,002	84.3	22,710	80.5	141	83.0	353	85.0	98	84.6	347	83.2	128	86.6	243	86.6
Operating expense [7]	1,901	17.8	4,582	16.2	32	18.7	68	16.4	21	18.5	66	15.7	25	17.1	42	15.1
Interest/dividends on savings accounts	6,895	64.6	19,089	67.7	112	66.4	288	69.3	79	68.3	284	68.2	101	68.5	188	66.8
Interest on borrowed money	764	7.1	1,392	5.0	10	6.0	14	3.3	5	4.0	16	3.8	10	7.0	16	5.8
Income tax provision [8]	241	2.3	969	3.4	3	2.0	13	3.1	2	1.5	14	3.3	3	2.1	14	4.9
Net income [9]	874	8.2	2,249	8.0	13	7.6	33	7.9	9	7.7	37	9.0	9	6.0	21	7.5

[1] FDIC, "Asset and Liabilities of Commercial and Mutual Savings Banks, loc. cit."
[2] Includes interest on deposits and borrowings.
[3] Federal, State, and local.
[4] Net income after (income) tax.
[5] FHLBB, "Combined Financial Statements."
[6] Does not include MSSIC associations.
[7] Does not include interest/dividends on savings accounts.
[8] Federal, State, local.
[9] After tax.

Primarily due to rising operating expenses, net return as measured by the ratio of net to gross operating income has been decreasing for all bank groups measured in these tables, although the ratio for District banks continues to exceed that of banks in the neighboring states.

Table 6(b) presents similar income-expense data for savings and loan associations in the District, Maryland, Virginia, and all U.S. insured. Therein is shown a decrease in operating expenses, although unlike commercial banks operating expenses for S&Ls do not include interest and dividends paid on savings accounts. When included, the net effect is very little change over the six-year period in these expenses. For District S&Ls, these operating/non-operating expenses have decreased by nearly 4% as measured against gross operating income. On the income side, mortgage interest income of savings and loan associations in Maryland, Virginia, and the District exceeds, percentagewise, that of other associations around the nation due to higher holdings of mortgage loans and above average yields on mortgages in the Washington metropolitan area.

As an offset to these advantages, tax provisions for savings and loan associations have been increasing although it should be stressed that with the exception of District associations, this is primarily due to legislated increases in federal tax burdens. Returns as measured by net to gross operating income for savings and loan associations in the District have improved over the current decade as has been the case with savings and loan associations in Maryland and Virginia. This runs counter to the industry as a whole, and again it would appear that this is primarily due to favorable conditions in the Washington metropolitan mortgage market rather than any regional changes or reductions in savings costs and tax burdens.

Finally, Table 7 shows various measures of growth and activity for commercial banks and savings and loan associations by these same four groupings for the years 1970 and 1976. As suggested earlier, commercial banks over this period have grown at about half the rate of banks in Maryland and Virginia and at only about 60% that of banks nationwide. District banks have shown a faster growth rate in loans secured by residential property than banks throughout the United States, although increases in these loans have been considerably less than for banks in Maryland and Virginia.

TABLE 7.—SELECTED GROWTH ITEMS, INSURED COMMERCIAL BANKS AND SAVINGS AND LOAN ASSOCIATIONS; ALL UNITED STATES, MARYLAND, VIRGINIA, DISTRICT OF COLUMBIA, 1970–76

Item	Percent change: 1970–76			
	All United States insured	Maryland [1]	Virginia	District of Columbia
COMMERCIAL BANKS [2]				
Change in U.S. securities	83.6	19.4	74.6	13.4
Change in obligations of State/local governments	53.0	102.1	84.5	79.8
Change in loans secured by residential properties	88.5	136.0	131.1	95.4
Change in assets	75.2	88.8	84.4	42.1
Change in deposits	72.1	81.8	85.1	36.3
Change in equity capital	78.6	84.9	88.3	56.6
SAVINGS AND LOAN ASSOCIATIONS [3]				
Change in mortgage loans	117.4	107.0	193.6	60.7
Change in assets	123.8	104.9	194.6	61.1
Change in savings deposits	130.7	113.3	195.6	61.4
Change in net worth	79.2	81.4	112.2	52.5

[1] Does not include MSSIC associations.
[2] Source: FDIC, Assets and liabilities of commercial and mutual savings banks, loc. cit.
[3] Source: FHLBB combined financial statements.

A similar sort of story holds for savings and loan associations in the District of Columbia. Growth in assets and deposits over the period 1970 to 1976 for S. & L's in the District was less than one-third that of S. & L.'s in Virginia, and about 60 percent of that experienced by S. & L.'s in Maryland. Over the current decade, savings and loan associations in the District have been growing at less than half the pace of the industry. There are various reasons which one might pose for this phenomenon, including such things as usury and regulatory limitations on lending, limitations in the savings deposit base, and tax-induced limitations on growth. It is the latter consideration which has particular relevance within the present context. It will receive further consideration as we more carefully scrutinize the existing tax treatment of financial institutions within the District, a matter to which we now turn.

V. Comparative Analysis of Federal-State Income Tax Burdens of Financial Institutions Within the United States, the District of Columbia, and Surrounding States

Table 8 provides a detailed analysis, over time, of effective federal and state income tax burdens for insured commercial banks and savings and loan associations in Maryland, Virginia, the District of Columbia, and all U.S. The findings cover the period 1970 through 1976 with federal and state income tax burdens measured against net "economic" income as well as the relative burdens of state income taxes to federal income taxes compared for commercial banks and savings and loan associations within these respective geographical areas. Data employed in this particular analysis were obtained through reports filed with the FDIC (commercial banks) and the FHLBB (savings and loan associations).[17]

[17] This is the only consistent data base over time from which one can obtain comparative state and federal tax figures.

TABLE 8.—EFFECTIVE FEDERAL-STATE INCOME TAX BURDENS: INSURED COMMERCIAL BANKS AND SAVINGS AND LOAN ASSOCIATIONS; ALL UNITED STATES, MARYLAND, VIRGINIA, DISTRICT OF COLUMBIA, 1971–76

Item	1970	1971	1972	1973	1974	1975	1976	1970	1971	1972	1973	1974	1975	1976
	Commercial banks [1]													
	All U.S. insured							Maryland						
Federal taxes as percent of net (economic) income [2]	23.6	19.4	17.3	15.4	14.9	13.5	13.3	33.3	28.8	23.3	23.9	21.7	14.7	11.9
State taxes as percent of net income [3]	3.6	4.0	4.2	4.4	4.4	5.5	4.8	4.0	4.6	4.8	4.5	4.7	4.7	3.6
Federal-State taxes as percent of net income	27.2	23.4	21.5	19.8	19.3	19.0	18.1	37.3	33.4	28.1	28.4	26.4	19.4	15.5
State taxes as percent of Federal taxes	15.1	20.8	24.0	28.4	29.6	40.9	35.7	12.1	16.1	20.5	18.7	21.6	32.2	30.0
	Virginia							District of Columbia [5]						
Federal taxes as percent of net (economic) income	22.3	19.9	17.5	16.7	16.7	10.7	8.3	37.8	32.3	30.3	31.0	31.6	31.8	25.3
State taxes as percent of net income	(4)	(4)	(4)	(4)	(4)	(4)	(4)	1.9	2.3	2.1	2.2	2.4	4.4	6.0
Federal-State taxes as percent of net income	22.3	19.9	17.5	16.7	16.7	10.7	8.3	39.7	34.6	32.4	33.2	34.0	36.2	31.3
State taxes as percent of Federal taxes								5.1	7.2	7.1	7.0	7.7	13.7	23.7
	Savings and loan associations [6]													
	All U.S. insured							Maryland						
Federal taxes as percent of net (economic) income [7]	18.5	20.6	22.3	23.4	24.8	24.0	24.1	17.4	19.6	20.9	23.8	24.9	22.8	22.8
State taxes as percent of net income	2.1	4.3	4.9	5.2	6.0	6.4	6.0	3.7	4.6	3.5	4.0	5.6	5.6	5.3
Federal-State taxes as percent of net income	20.6	24.9	27.2	28.6	30.8	30.4	30.1	21.1	24.2	24.4	27.8	30.5	28.4	28.1
State taxes as percent of Federal taxes	11.4	20.7	21.8	22.0	24.2	26.8	25.0	21.4	23.6	16.7	16.8	22.6	24.6	23.1
	Virginia							District of Columbia						
Federal taxes as percent of net (economic) income	15.7	19.4	23.1	23.6	24.7	23.7	24.9	17.5	22.0	22.2	23.4	19.0	20.0	22.7
State taxes as percent of net income		0.2	1.8	2.4	2.4	2.5	2.5	8.4	13.2	9.8	9.8	18.8	22.0	16.9
Federal-State taxes as percent of net income	15.7	19.6	24.9	26.0	27.1	26.2	27.4	25.9	35.2	32.0	33.2	37.8	42.0	39.6
State taxes as percent of Federal taxes		1.2	8.0	10.2	9.9	10.5	10.0	48.0	60.1	44.2	41.7	99.3	110.1	74.4

[1] Source: FDIC, "Assets and Liabilities of Commercial and Mutual Savings Banks," loc. cit.
[2] Provision for Federal income taxes. Net (economic) income defined as: Income before all income taxes plus security gains (loss) plus extraordinary charges/credits; (includes income from State/local obligations.)
[3] State income taxes.
[4] Less than 0.5 pct; Virginia does not levy an income tax on banks.
[5] Because the District of Columbia tax is a gross earnings tax, some banks do not treat the tax as an income tax for regulatory purposes, including it in other expenses rather than in provision for taxes.
[6] Source: FHLBB, "Combined Financial Statements."
[7] Net (economic) income defined as: Income before deduction for income taxes and bad debt reserves.

Basically, the results of the analysis as presented in Table 8 show that:

1. Nationwide, federal taxes have been decreasing for commercial banks while increasing for savings and loan associations. This general pattern as shown in the U.S. figures is evidenced in the neighboring states of Maryland and Virginia, particularly for commercial banks, but has not been true in the District of Columbia. Until 1976, the federal tax burden of commercial banks in the District of Columbia has remained relatively steady, around 31 percent. Elsewhere rates have declined, even to below 10 percent for banks in Virginia in 1976.

2. State tax burdens have remained relatively stable throughout the U.S., Virginia, and Maryland with only slight increases registered for savings and loan associations. This has not been true in the District of Columbia, particularly for savings and loan associations, where state tax burdens as a percent of net "economic" income have increased several-fold over the past six years.

As pointed out above, many commercial banks in the District of Columbia list for regulatory purposes the gross earnings tax under "other operating income" rather than under "provision for taxes." Accordingly, the state tax figures as reported in Table 8 would be understated. To test the extent of this reporting error, tax data were used from the federal and D.C. tax returns of commercial banks. It was found for District banks that their federal income and D.C. gross earnings taxes combined have averaged around 40 percent of net (economic) income throughout the 1970s which is slightly higher than for savings and loan associations. Again using these (modified) tax figures, the D.C. gross earnings tax as a percent of federal taxes paid by banks in the District of Columbia ranged from a low of 22 percent in 1971 to over 50 percent in 1976.[18]

With these considerations in mind, it can be seen from Table 8 that the District's gross earnings tax burden and the combined federal-District income (gross earnings) tax burdens exceed similar measures for either commercial banks or savings and loan associations in Maryland, Virginia, or for the U.S. averages. For the District banks, this is partly due to their above average federal tax burden. In the case of savings and loan associations, the distinction is quite clear since their federal tax burdens have on average been lower than those of associations in the neighboring states, and the United States.

State (District) taxes as a percent of federal taxes are high for both commercial banks and savings and loan associations, in spite of the fact that commercial banks in the District are paying federal taxes at rates above industry averages and District savings and loans are not paying federal taxes at rates significantly below those of associations elsewhere.

Sizeable increases in effective tax burdens, such as occurred with District S. & L.s in 1974–75, are not the consequence of rate changes but rather due to decreases in economic income. Although District banks did not show the same degree of financial (economic) downturn as

[18] Similar calculations for savings and loan associations were not felt to be necessary since the degree of discrepancy due to under-reporting which occurs in the case of commercial banks does not appear to occur for savings and loan associations. In addition, none of the results mentioned above are altered by such calculations.

S. & L.s in these years, this points out a serious problem with the gross earnings tax; namely, the tax can prove to be quite burdensome during a profit-squeeze period such as 1974–75. Even though the economic downturn was nationwide and profit-squeezes were experienced by financial institutions throughout the nation during this period, there were no sizeable increases in the effective burden of state taxes registered in any of the other areas shown on Table 8. Because most state taxes on financial institutions are tied to some net income base, absolute tax levels by-and-large decline proportionately with economic income. This responsiveness does not exist in the D.C. gross earnings tax leading to tax burdens in some instances which by any comparative or absolute measure would have to be considered excessive.

VI. Federal Tax Treatment of Commercial Banks and Savings Loan Associations

Before turning to a more detailed look at the tax treatment of financial institutions in the District of Columbia and options to it, a few comments should be made as to the tax treatment of financial institutions at the federal level. This is useful in explanation of the tax patterns as were set forth in Table 8. More importantly, through such an exercise one gains a better understanding of what the nature of that tax base is as well as the potential long-term stability of that base from the standpoint of revenue collection. As was detailed in Table 3, most states do tax financial institutions on some modified form of federal income tax base.

Historically, savings and loan association have made use one mechanism in reducing their federal income tax burden; namely, the deduction for additions to loss reserves—the "bad debt deduction." Essentially, this provision is a deduction permitted thrift institutions for addition to their loss reserves with the amount of the deduction a specified percentage of taxable income. Prior to the Tax Reform Act of 1969, the deduction permitted was 60 percent of taxable income, with certain limitations as to the absolute size of the total loss reserve. These limitations have not imposed upon the size of the deduction so that most associations have been able to take the full deduction allowable under the law.

Under the provisions of the Tax Reform Act of 1969, the percentage of taxable income which could be claimed as an allowable deduction under the bad debt provisions was reduced in stepwise fashion from 60 percent to 40 percent in 1979. The current (1977) allowable deduction under this provision is 42 percent of taxable income. Primary qualifications for the deduction is that savings and loan associations must maintain 82 percent of their assets in certain qualifying assets, which are primarily tied to loans secured by residential real property. Failure to maintain the specified level of qualifying assets results in a stepwise reduction in the bad debt deduction permitted. Under current tax law, the bad debt deduction will be maintained at 40 percent of net income after 1979.

Because of regulatory restrictions on investments, and because of the enormous tax-reducing potential of the bad debt allowance provision itself, savings and loan associations have not reduced their federal tax

burdens by other means. Commercial banks, on the other hand, have been able to reduce their federal income tax burdens because of the tax-reducing consequences of their investment activities rather than any major preferential treatment in the Tax Code, such as the bad debt deduction provision. Thus, through their holdings of tax-exempt securities, foreign operations, and financial lease arrangements (to mention the three primary methods by which banks are able to decrease federal taxes), commercial banks have been able to reduce their effective federal tax burden from around 40 percent in the early 1960's to around 14 percent in 1975.

This is an important consideration in patterning the tax treatment of financial institutions at the state (or local) level after the federal income tax. Financial institutions, because of the nature of the business, can significantly alter the relative size of their tax base through investments. This is not to say that taxes are the sole motivation for such investment activities, but certainly at the federal level where the marginal tax rate is 48 percent, there has been motivation from a tax standpoint to invest in such things as tax-exempt securities and financial lease operations. Another important consideration in patterning a tax after the federal system is that as in the case of savings and loan associations with the bad debt deduction, the tax base, and thereby the tax, is often altered by federal action. This action may come directly through the tax structure, as with statutory reductions in the bad debt deduction, or indirectly, such as through financial reform where savings and loan associations would be able to reduce their federal income tax base by investment activities heretofore prohibited by regulation.

VII. Tax Burden Analysis of the Existing Gross Earnings Tax

In Tables 9 and 10 are presented the results of an analysis on the tax and estimated effective tax rates under the gross earnings tax on savings and loan associations and commercial banks within the District of Columbia from 1971 through 1976. On request of the D.C. Tax Commission, fifteen banks and sixteen savings and loan associations currently operating in the District voluntarily provided detailed tax information covering the period 1971 through 1976 (where applicable) from both their federal income tax returns and their D.C. gross earnings tax returns. These data were then aggregated by time and by financial institution, providing the basis for the results shown in Tables 9, 10, and ensuing tables.

TABLE 9.—TAX AND ESTIMATED EFFECTIVE TAX RATES UNDER EXISTING GROSS EARNINGS TAX, DISTRICT OF COLUMBIA SAVINGS AND LOAN ASSOCIATIONS: 1971–76 ALTERNATE MEASURES [1]

Measure	FY 1971 [2]	CY 1971 [2]	FY 1972	CY 1972	FY 1973	CY 1973	FY 1974	CY 1974	FY 1975	CY 1975	FY 1976	CY 1976
(A) All savings and loans:												
District of Columbia tax (in $1,000) [3]		$2,662		$3,123		$3,693		$4,444		$5,551		[4] $5,867
Effective rate (in percent) [5]		12.6		11.0		12.2		23.4		22.7		17.0
District of Columbia tax (in $1,000) [6]	$2,714		$3,282		$3,945		$4,479		$4,741		$7,754	
Effective rate (in percent) [7]	12.9		12.9		13.3		18.2		21.8		26.3	
(B) Large savings and loans: [8]												
District of Columbia tax (in $1,000) [3]		2,023		2,347		2,695		3,255		4,155		[4] 4,527
Effective rate (in percent) [5]		11.9		11.0		12.1		21.7		20.7		16.6
District of Columbia tax (in $1,000) [6]	2,059		2,442		2,870		3,243		3,429		5,666	
Effective rate (in percent) [7]	12.2		12.8		13.2		17.4		19.7		24.0	
(C) Middle savings and loans: [9]												
District of Columbia tax (in $1,000) [3]		462		574		757		932		1,117		[4] 1,070
Effective rate (in percent) [5]		12.9		9.3		12.6		27.4		27.0		16.7
District of Columbia tax (in $1,000) [6]	468		627		836		981		1,019		1,618	
Effective rate (in percent) [7]	13.1		12.9		13.7		20.9		27.1		30.7	
(D) Small savings and loans: [10]												
District of Columbia tax (in $1,000) [3]		177		202		241		247		319		[4] 270
Effective rate (in percent) [5]		30.5		20.9		20.4		38.5		45.0		30.0
District of Columbia tax (in $1,000) [6]	187		213		239		253		292		470	
Effective rate (in percent) [7]	32.2		27.6		22.3		27.3		55.3		75.0	

[1] Source: U.S. corporate income tax returns (form 1120); District of Columbia gross earnings/gross receipts tax returns. Taxes and effective rates based on tax rate in effect in Calendar or fiscal year shown.
[2] CY=calendar year; FY=fiscal year.
[3] As shown on Form 1120.
[4] FHLBB data partially used.
[5] Tax divided by economic income. Economic income measured as sum of taxable income, District of Columbia gross earnings tax deduction, bad debt deductions, and tax-exempt interest.
[6] As shown of District of Columbia returns.
[7] Tax divided by economic income. Economic income estimated for fiscal year by averaging Calendar Year economic income bases.
[8] Associations with assets over $250 million in 1976.
[9] Associations with assets between $100 million and $250 million in 1976.
[10] Associations with assets less than $100 million in 1976.

TABLE 10.—TAX AND ESTIMATED EFFECTIVE TAX RATES UNDER EXISTING GROSS EARNINGS TAX, DISTRICT OF COLUMBIA COMMERCIAL BANKS: 1971–76 ALTERNATE MEASURES[1]

Measure	FY 1971[2]	CY 1971[2]	FY 1972	CY 1972	FY 1973	CY 1973	FY 1974	CY 1974	FY 1975	CY 1975	FY 1976	CY 1976
(A) All commercial banks:												
District of Columbia tax (in $1,000)[3]		$3,638		$3,658		$4,174		$4,967		$6,251		[4] $7,315
Effective rate (in percent)[5]		7.0		7.6		8.7		8.8		9.4		12.2
District of Columbia tax (in $1,000)[6]	$3,540		$3,794		$4,376		$5,321		$6,039		$8,281	
Effective rate (in percent)[7]	6.9		7.6		9.1		10.1		9.9		13.1	
(B) Large commercial banks:[8]												
District of Columbia tax (in 1,000)[3]		3,215		3,260		3,647		4,430		5,604		[4] 6,490
Effective rate (in percent)[5]		6.8		7.5		8.6		8.6		9.1		11.7
District of Columbia tax (in $1,000)[6]	3,090		3,306		3,873		4,751		5,511		7,472	
Effective rate (in percent)[7]	6.6		7.3		9.0		10.2		9.7		12.7	
(C) Small commercial banks:[9]												
District of Columbia tax (in $1,000)[3]		423		399		528		537		647		827
Effective rate (in percent)[5]		9.2		8.6		9.0		9.8		13.6		18.6
District of Columbia tax (in $1,000)[6]	450		488		502		564		578		810	
Effective rate (in percent)[7]	9.9		10.6		9.5		9.9		11.3		17.7	

[1] Source: U.S. corporate income tax returns (form 1120); District of Columbia gross earnings/gross receipts tax returns. Taxes and effective rates based on tax rate in effect in Calendar or fiscal year shown.
[2] CY=calendar year; FY=fiscal year.
[3] As shown on Form 1120.
[4] FDIC data partially used.
[5] Tax divided by economic income. Economic income measured as sum of taxable income, District of Columbia gross earnings tax deduction, bad debt deductions, and tax-exempt interest.
[6] As shown on District of Columbia returnes.
[7] Tax divided by economic income. Economic income estimated for fiscal year by averaging Calendar Year economic income bases.
[8] Banks with assets over $100 million in 1976.
[9] Banks with assets at or under $100 million in 1976.

In order to look at the comparative impact of the gross earnings tax, as well as options to it, on D.C. depository intermediaries by size of institution, the totals were disaggregated into three asset-size classes for savings and loan associations and two asset-size classes for commercial banks.[19] For savings and loan associations, these asset categories are: large associations, with assets over $250 million in 1976; medium, or middle associations, with assets between $100 million and $250 million in 1976; and small associations, with assets less than $100 million in 1976. For commercial banks, large banks are defined as those with assets over $100 million in 1976; small banks defined as having assets at or under $100 million in 1976. Using this classification scheme, it was possible to obtain a relatively even distribution, by number, of associations and banks in each size class.

The tax and estimated effective tax burden calculations are shown on a time series basis in order to reflect changing patterns which have occurred under the existing rate structure as well as to gain a feel for the comparative impact of legislative changes which have occurred during this period.

D.C. gross earnings tax returns are on a fiscal year basis. They provide the best measure available for determining effective tax rates or effective tax burdens. However, there are no net or economic income measures available on a fiscal year basis, so they must be estimated, or derived, from calendar year figures. Calculations of effective rates on a calendar year basis are possible in that data on the gross earnings tax are available from the federal income tax returns—Form 1120. Also, net (or economic) income bases can be derived directly from these returns. However, because of differences in timing on a time series basis in order to reflect changing patterns which have patterns between federal and District returns (tax accrual vs. actual tax payments), entries for the D.C. gross earnings tax on the federal returns must be regarded as approximations of tax burden rather than actual tax payments. In this regard, the fiscal year, or District of Columbia, gross earnings tax data are superior. Therefore, because of these reporting and measurement problems, tax burdens and effective tax rates under the D.C. gross earnings tax are shown for both calendar and fiscal years from 1971 through 1976. As can be seen, the two methods lead with few exceptions to virtually the same results for both classes of financial institutions, by size class, over most time periods calculated. Because of this, one can have a fair amount of confidence in the rates and rate trends as well as the conclusions and results emanating from these figures.

Having disposed of the technical considerations surrounding the data and the methodology employed in these tables, we can now turn to the primary results and conclusions. For savings and loan associations, Table 9 shows:

1. A rising tax burden under the D.C. gross earnings tax due to (a) cyclical considerations, particularly the economic downturn experienced in the industry in the period of 1974–75; and (b) increased rates, from 2 to 3 percent, in 1976.[20]

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[19] Because of the distribution of commercial banks in the District of Columbia by size, it was not possible to form three meaningful asset groupings.

[20] Note that the regulatory data as shown in Table 8 did not reflect increases in rates for either savings and loan associations or commercial banks. Accordingly, such numbers in 1976 understated actual tax liability by as much as 50 percent. This problem, of course, does not arise for data used from the gross earnings tax returns.

2. Uneven and unstable tax burdens impacting savings and loan associations over time, regardless of size, which are bound to have serious implications in terms of financial planning and financial performance of these associations.

3. An inverse relation between the size and tax burden of associations with the high burdens on small savings and loan associations, as shown in Table 9, reflective of associations with either relatively small or zero economic income paying relatively high taxes under the gross earnings tax.

For commercial banks, the primary conclusions which arise out of Table 10 are:

1. A rising burden of tax on commercial banks which is primarily rate induced. The cyclical instability in terms of tax burdens referred to in the case of savings and loan associations is less evident here.

2. A higher burden of taxes on smaller banks. The disparity in burdens which exists between the largest and smallest savings and loan associations is not as great between the largest and smallest banks.

In general, one concludes from these two tables that:

1. The D.C. gross earnings tax has imposed a somewhat higher burden on savings and loan associations than commercial banks with the difference in some cases being severalfold for smaller institutions.

2. The burden of local taxation on financial institutions in the District of Columbia exceeds that of non-financial industry.

3. The above phenomena are the consequences of a tax which is tied to gross earnings and does not recognize fluctuations in yield spreads and cost differentials between and within industry groups.

VIII. Taxation of Commercial Banks and Savings and Loan Associations Under the Gross Earnings Tax—The Equity Issue

One of the points that was raised in reference to Tables 9 and 10 was that for the most part, the impact of the gross earnings tax has been more burdensome on savings and loan associations than commercial banks. This was a key issue in the debate surrounding the Revenue Act of 1975 where rates on commercial banks and savings and loan associations were increased by 50 percent with a subsequent rollback for savings and loan associations.[21] In Tables 11 and 12, we address ourselves specifically to the relative burden of the gross earnings tax on commercial banks and savings and loan associations. However, at the outset, it should be stressed that because of the different financial structure, investment policies, and regulatory limitations which impact these two "types" of financial institutions, there will be differences in tax burdens over time unless tax bases are continually modified to recognize these differences—something which is legislatively and technically impossible.

Although the merits of any tax program should not be decided on equity issues alone, comparative analysis is useful not only in that it points out differences in taxes and tax burdens at any point in time but it also reveals relative changes in these patterns over time. Furthermore, such an analysis may reveal (as in Tables 11–12) that because of differences in financial structure, a particular tax on S&Ls may not be interchangeable with a similarly structured tax on banks with neutral revenue effects.

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[21] See the discussion in Section B.

TABLE 11.—ESTIMATED TAX AND EFFECTIVE TAX RATES, DISTRICT OF COLUMBIA SAVINGS AND LOAN ASSOCIATIONS TAXED AS COMMERCIAL BANKS [1]

[Dollar amounts in thousands]

Item	1971	1972	1973	1974	1975	1976
(A) All savings and loan associations:						
Present tax [2]	$2,714	$3,282	$3,945	$4,479	$4,741	$7,754
Tax—Option No. 1 [3]	1,503	1,866	2,436	2,978	3,035	4,675
Tax—Option No. 2 [4]	2,255	2,800	3,640	4,467	4,550	4,675
Effective rate—Option No. 1 (percent) [5]	(7.1)	(7.5)	(8.4)	(12.3)	(13.9)	(15.9)
Effective rate—Option No. 2 (percent) [5]	(10.7)	(11.3)	(12.5)	(18.4)	(20.9)	(5.9)
B) Large S. & L's.: [6]						
Present tax	2,059	2,442	2,870	3,243	3,429	5,666
Tax—Option No. 1	1,128	1,345	1,724	2,112	2,147	3,360
Tax—Option No. 2	1,693	2,080	2,589	3,168	3,220	3,360
Effective rate—Option No. 1 (percent)	(6.6)	(7.1)	(7.9)	(11.3)	(12.3)	(14.2)
Effective rate—Option No. 2 (percent)	(10.0)	(10.6)	(11.9)	(17.0)	(18.5)	(14.2)
(C) Middle S. & L.'s: [7]						
Present tax	468	627	836	981	1,019	1,618
Tax—Option No. 1	247	364	544	685	674	956
Tax—Option No. 2	370	545	815	1,027	1,011	956
Effective rate—Option No. 1 (percent)	(6.9)	(7.5)	(8.9)	(6.1)	(17.9)	(18.2)
Effective rate—Option No. 2 (percent)	(10.4)	(11.2)	(13.4)	(9.1)	(26.8)	(18.2)
(D) Small S. & L.'s: [8]						
Present tax	187	312	239	253	292	470
Tax—Option No. 1	128	149	169	181	215	360
Tax—Option No. 2	192	224	254	272	322	360
Effective rate—Option No. 1 (percent)	(22.0)	(19.3)	(15.7)	(19.6)	(42.9)	(45.0)
Effective rate—Option No. 2 (percent)	(33.1)	(29.0)	(23.7)	(29.4)	(64.3)	(45.0)

[1] Source: U.S. corporate income tax returns, form 1120; District of Columbia gross earnings/gross receipts tax returns. All measures on a fiscal year basis. Commercial bank tax base and rates applied to S. & L.'s.
[2] Actual tax payments.
[3] Tax rate equals 4 percent of gross earnings, 1971–75; equals 6 percent in 1976. Gross earnings redefined so interest paid to depositors is an allowable deduction.
[4] Tax rate equals 6 percent of gross earnings throughout. Interest paid to depositors an allowable deduction, as in option No. 1.
[5] Tax divided by economic income, as defined in table 9.
[6] Associations with assets over $250,000,000 in 1976.
[7] Associations with assets between $100,000,000 and $250,000,000 in 1976.
[8] Associations with assets less than $100,000,000.

TABLE 12.—ESTIMATED TAX AND EFFECTIVE TAX RATES DISTRICT OF COLUMBIA BANKS TAXED AS SAVINGS AND LOANS [1]

[Dollar amounts in thousands]

Item	1971	1972	1973	1974	1975	1976
(A) All commercial banks:						
Present tax [2]	$3,540	$3,794	$4,376	$5,321	$6,089	$8,281
Tax—Option No. 1 [3]	2,845	2,870	3,175	4,450	5,100	6,800
Tax—Option No. 2 [4]	4,266	4,300	4,765	6,675	7,650	6,800
Effective rate—Option No. 1 (percent) [5]	(5.5)	(5.7)	(6.6)	(8.5)	(8.3)	(10.8)
Effective rate—Option No. 2 (percent) [5]	(8.3)	(8.6)	(9.9)	(12.7)	(12.4)	(10.8)
(B) Large commercial banks: [6]						
Present tax	3,090	3,306	3,873	4,757	5,511	7,472
Tax—Option No. 1	2,530	2,540	2,810	4,020	4,670	6,244
Tax—Option No. 2	3,800	3 810	4,215	6,030	7,000	6,244
Effective rate—Option No. 1 (percent)	(5.4)	(5.6)	(6.5)	(8.6)	(8.5)	(10.6)
Effective rate—Option No. 2 (percent)	(8.1)	(8.4)	(9.8)	(12.9)	(12.4)	(10.6)
(C) Small commercial banks:						
Present tax	450	488	503	564	578	810
Tax—Option No. 1	315	330	365	430	430	556
Tax—Option No. 2	466	490	500	645	650	556
Effective rate—Option No. 1 (percent)	(6.9)	(7.1)	(6.9)	(7.5)	(8.4)	(12.1)
Effective rate—Option No. 2 (percent)	(10.2)	(10.6)	(10.4)	(11.3)	(12.7)	(12.1)

[1] Source: U.S. Corporate Income Tax Returns, form 1120; District of Columbia gross earnings/ gross receipts tax returns. All measures on a fiscal year basis. S. & L. tax base and rates applied to commercial banks.
[2] Actual tax payments.
[3] Tax rate equals 2 percent of gross earnings, 1971–75; equals 3 percent in 1976. Gross earnings redefined so interest paid to depositors not allowed as a deduction.
[4] Tax rate equals 3 percent of gross earnings throughout.
[5] Tax divided by economic income, as defined in table 10.
[6] Banks with assets over $100,000,000 in 1976.
[7] Banks with assets at or under $100,000,000 in 1976.

For these reasons and because such arguments have apparently carried significant weight in the past, Tables 11 and 12 look at the question: "What if savings and loan associations were taxed under the D.C. gross earnings tax as commercial banks, and vice versa?" Table 11 presents two options. In the first, savings and loan associations are taxed as commercial banks under rates which were in existence at the time. Thus for the first option, interest paid to depositors is deductible with a 4 percent rate applicable prior to 1976, and a 6-percent rate in 1976. In Option 2, a 6-percent rate is applicable throughout. Table 12 shows the results from a similar sort of analysis for commercial banks. In Option 1, banks are taxed as savings and loan associations at rates in effect in the year stipulated. Option 2 shows estimated taxes and effective tax rates for commercial banks taxed as S. & L.s under the 1976 rate structure. Under these two options, interest paid to depositors by commercial banks is not deductible. A 2-percent rate applies from 1971 to 1975, with a 3-percent rate in 1976, under Option 1. A 3-percent rate is applicable throughout under Option 2. As in the previous two tables, results are shown for the three size classes for savings and loan associations and for the two size classes of commercial banks.

The principal findings are:

1. If savings and loan associations were taxed as commercial banks under pre-1976 rates, their taxes on the average would have been 30 percent to 40 percent less than they were under the existing tax structure.

2. If savings and loan associations had been taxed as commercial banks are currently taxed under existing rates, then there would have been very little change in the tax burden of savings and loan associations, with smaller associations paying more under the commercial bank tax than under the existing tax structure.

3. At rates which were in existence in 1976 for savings and loan associations (3 percent of their gross earnings base), savings and loan associations were paying 40 percent to 50 percent more than if they had been taxed at existing bank rates and on a commercial bank tax base. This would have been more so for large savings and loan associations than the small ones.

4. Commercial banks would have paid less tax under the 2 percent savings and loan base and rate than they did under their own tax over the 1971–1976 period, from 20 to 25 percent less.

5. Commercial banks would have paid more under a savings and loan base at a 3-percent rate than under the 4-percent rate on their own base which was in existence prior to 1976. But as is shown in the

1976 figures, banks paid about 25 percent more under the existing tax than they would have had they been taxed at a 3-pecent rate on the S. & L. tax base.

6. Large commercial banks proportionately would have paid more under the 3-percent (S. & L.) gross earnings tax than would have smaller banks.

7. Collectively, these results point out two important considerations:

(a) Commercial bank tax burdens are relatively more sensitive to rates than are savings and loan associations under the gross earnings tax;

(b) Savings and loan tax burdens are more sensitive to the deductibility of deposits provision provided commercial banks than to rate differences which exist between the two institutions under the existing gross earnings tax. A glance back at Table 6 quantitatively reveals the relative importance to the two financial institutions of the deductibility of deposits provision: Payments to depositors constituted 32 percent of gross operating income of commercial banks and over 66 percent of gross operating income of savings and loan associations.

IX. Net Income Based Tax Options to the Gross Earnings Tax on Financial Institutions

Tables 13 through 19 examine several options to the D.C. gross earnings tax on financial institutions. These options are basically excise taxes which would be functions of various measures of net income. As stressed in Table 3, a net income-based excise tax is the most widely used state tax on financial institutions and, from previous debate on this issue, is the most oft-cited alternative to the existing gross earnings tax.

The results in Table 13 show estimates as to revenues and effective tax burdens for all D.C. savings and loan associations under the tax alternatives. Tables 14 to 16 give results for the large, medium, and small asset-size classifications for savings and loan associations. As before, the analysis is simulated over the six-year period 1971 through 1976, employing federal and gross earnings tax data provided by the sixteen D.C. savings and loan associations. A similar sort of analysis is conducted in Tables 17 through 19 for commercial banks and is based on the data provided from the federal and D.C. gross earnings tax returns of fifteen of the sixteen commercial banks in the District. Table 17 presents results for all commercial banks with Tables 18 and 19 showing like figures for the large and small commercial bank asset classes cited previously.

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TABLE 13.—ESTIMATED TAX AND EFFECTIVE TAX RATES ALL DISTRICT OF COLUMBIA SAVINGS AND LOAN ASSOCIATIONS TAXED UNDER AN EXCISE TAX,[1] ALTERNATIVE (NET) INCOME BASES [2]

[Dollar amounts in thousands]

	1971	1972	1973	1974	1975	1976
Tax base A:[3]						
Tax—Option No. 1[4]	$643	$1,125	$1,175	$790	$1,042	$1,590
	[5] (183)	(220)	(227)	(233)	(258)	(281)
Tax—Option No. 2[6]	460	827	913	650	1,175	1,590
	(155)	(186)	(191)	(198)	(220)	(281)
Effective rate—Option No. 1 (percent)[7]	(3.0)	(4.0)	(3.9)	(4.1)	(4.3)	(4.6)
Effective rate—Option No. 2 (percent)	(2.2)	(2.9)	(3.0)	(3.4)	(4.8)	(4.6)
Tax base B:[8]						
Tax—Option No. 1	1,620	2,400	2,439	1,400	1,900	2,810
Tax—Option No. 2	1,100	1,728	1,860	1,142	2,210	2,810
Effective rate—Option No. 1 (percent)	(7.7)	(8.4)	(8.0)	(7.4)	(7.8)	(8.1)
Effective rate—Option No. 2 (percent)	(5.2)	(6.1)	(6.1)	(6.0)	(9.0)	(8.1)
Tax Base C:[9]						
Tax—Option No. 1	2,253	3,011	3,120	2,093	2,658	3,677
Tax—Option No. 2	1,516	2,162	2,385	1,703	3,134	3,677
Effective rate—Option No. 1 (percent)	(10.6)	(10.6)	(10.6)	(10.6)	(10.6)	(10.6)
Effective rate—Option No. 2 (percent)	(7.2)	(7.6)	(8.1)	(9.0)	(12.8)	(10.6)

[1] Excise tax patterned after District of Columbia corporate franchise tax in terms of rates applied to alternative net income bases.
[2] Sources: U.S. corporate income tax returns, form 1120; District of Columbia gross earnings/gross receipts tax returns; all entries measured on a calendar year basis.
[3] Taxable income as defined for Federal income tax purposes plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[4] District of Columbia corporate franchise and personal property tax rates as of calendar year 1976 applied throughout.
[5] Numbers in prentheses are estimates of the personal property tax portion of the tax under each option, in thousands of dollars.
[6] District of Columbia corporate franchise and personal property tax rates as of year indicated.
[7] Economic income as defined in table 9.
[8] Same as tax base A, plus deductions for additions to bad debt reserves.
[9] Same as tax base B, plus interest on U.S. and State/local obligations.

TABLE 14.—ESTIMATED TAX AND EFFECTIVE TAX RATES LARGE DISTRICT OF COLUMBIA SAVINGS AND LOAN ASSOCIATIONS[1] TAXED UNDER AN EXCISE TAX, ALTERNATIVE (NET) INCOME BASES[2]

[Dollar amounts in thousands]

	1971	1972	1973	1974	1975	1976
Tax base A:[3]						
Tax—Option No. 1[4]	$570	$885	$950	$670	$960	$1,360
	[5] (139)	(154)	(163)	(172)	(192)	(205)
Tax—Option No. 2[6]	400	650	740	550	1,100	1,360
	(118)	(130)	(138)	(146)	(162)	(205)
Effective rate—Option No. 1 (percent)[7]	(3.4)	(4.2)	(4.3)	(4.5)	(4.8)	(5.0)
Effective rate—Option No. 2 (percent)	(2.4)	(3.0)	(3.3)	(3.8)	(5.5)	(5.0)
Tax base B:[8]						
Tax—Option No. 1	1,370	1,840	1,900	1,200	1,660	2,330
Tax—Option No. 2	925	1,325	1,460	985	1,945	2,330
Effective rate—Option No. 1 (percent)	(8.1)	(8.6)	(8.5)	(8.0)	(8.4)	(8.5)
Effective rate—Option No. 2 (percent)	(5.5)	(6.2)	(6.6)	(6.6)	(9.8)	(8.5)
Tax base C:[9]						
Tax—Option No. 1	1,800	2,250	2,350	1,635	2,140	2,885
Tax—Option No. 2	1,210	1,610	1,800	1,330	2,525	2,885
Effective rate—Option No. 1 (percent)	(10.6)	(10.6)	(10.6)	(10.6)	(10.7)	(10.6)
Effective rate—Option No. 2 (percent)	(7.1)	(7.6)	(8.1)	(8.9)	(12.7)	(10.6)

[1] Associations with assets over $250,000,000 in 1976.
[2] Sources: U.S. corporate income tax returns, form 1120; District of Columbia gross earnings/gross receipts tax returns; all entries measured on a calendar year basis.
[3] Taxable income as defined for Federal income tax purposes plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[4] District of Columbia corporate franchise and personal property tax rates as of calendar year 1976 applied throughout.
[5] Numbers in parentheses are estimates of the personal property tax portion of the tax under each option, in thousands of dollars.
[6] District of Columbia corporate franchise and personal property tax rates as of year indicated.
[7] Economic income as defined in table 9.
[8] Same as tax base A, plus deductions for additions to bad debt reserves.
[9] Same as tax base B, plus interest on U.S. and State/local obligations.

TABLE 15.—ESTIMATED TAX AND EFFECTIVE TAX RATES MIDDLE DISTRICT OF COLUMBIA SAVINGS AND LOAN ASSOCIATIONS[1] TAXED UNDER AN EXCISE TAX, ALTERNATIVE (NET) INCOME BASES[2]

[Dollar amounts in thousands]

	1971	1972	1973	1974	1975	1976
Tax base A:[3]						
Tax—Option No. 1[4]	$88	$245	$210	$125	$90	$195
	[5] (32)	(46)	(50)	(50)	(53)	(60)
Tax—Option No. 2[6]	64	180	165	105	93	195
	(27)	(39)	(42)	(42)	(45)	(60)
Effective rate—Option No. 1 (percent)[7]	(2.5)	(4.0)	(3.5)	(3.7)	(2.2)	(3.0)
Effective rate—Option No. 2 (percent)	(1.8)	(2.9)	(2.7)	(3.1)	(2.2)	(3.0)
Tax base B:[8]						
Tax—Option No. 1	255	530	470	175	225	420
Tax—Option No. 2	175	380	360	145	255	420
Effective rate—Option No. 1 (percent)	(7.1)	(8.6)	(7.8)	(5.1)	(5.4)	(6.6)
Effective rate—Option No. 2 (percent)	(4.9)	(6.1)	(6.0)	(4.3)	(6.2)	(6.6)
Tax base C:[9]						
Tax—Option No. 1	380	650	640	380	460	690
Tax—Option No. 2	230	470	490	310	535	690
Effective rate—Option No. 1 (percent)	(10.6)	(10.6)	(10.6)	(10.6)	(10.6)	(10.7)
Effective rate—Option No. 2 (percent)	(6.4)	(7.6)	(8.1)	(9.1)	(12.9)	(10.7)

[1] Associations with assets between $100,000,000 and $250,000,000 in 1976.
[2] Sources: U.S. corporate income tax returns, form 1120; District of Columbia gross earnings/gross receipts tax returns; all entries measured on a calendar year basis.
[3] Taxable income as defined for Federal income tax purposes plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[4] District of Columbia corporate franchise and personal property tax rates as of calendar year 1976 applied throughout.
[5] Numbers in parentheses are estimates of the personal property tax portion of the tax under each option, in thousands of dollars.
[6] District of Columbia corporate franchise and personal property tax rates as of year indicated.
[7] Economic income as defined in table 9.
[8] Same as tax base A, plus deductions for additions to bad debt reserves.
[9] Same as tax base B, plus interest on U.S. and State/local obligations.

TABLE 15.—ESTIMATED TAX AND EFFECTIVE TAX RATES SMALL DISTRICT OF COLUMBIA SAVINGS AND LOAN ASSOCIATIONS[1] TAXED UNDER AN EXCISE TAX, ALTERNATIVE (NET) INCOME BASIS[2]

[Dollar amounts in thousands]

	1971	1972	1973	1974	1975	1976
Tax base A:[3]						
Tax—Option No. 1[4]	$12	$13	$14	$13	$15	$44
	[5] (12)	(13)	(14)	(13)	(15)	(18)
Tax—Option No. 2[6]	10	11	11	11	13	44
	(10)	(11)	(11)	(11)	(13)	(18)
Effective rate—Option No. 1	(2.1)	(1.3)	(1.2)	(1.9)	(2.9)	(4.9)
Effective rate—Option No. 2	(1.7)	(1.1)	(.9)	(1.6)	(2.5)	(4.9)
Tax base B:[8]						
Tax—Option No. 1	12	19	50	13	15	65
Tax—Option No. 2	10	15	40	11	13	65
Effective rate—Option No. 1 (percent)	(2.1)	(2.0)	(4.2)	(1.9)	(2.9)	(7.2)
Effective rate—Option No. 2 (percent)	(1.7)	(1.6)	(3.4)	(1.6)	(2.5)	(7.2)
Tax base C:[9]						
Tax—Option No. 1	73	110	130	78	63	106
Tax—Option No. 2	47	78	100	63	73	106
Effective rate—Option No. 1 (percent)	(12.6)	(11.4)	(11.0)	(11.7)	(12.2)	(11.7)
Effective rate—Option No. 2 (percent)	(8.1)	(8.1)	(8.5)	(9.4)	(14.2)	(11.7)

[1] Associations with assets under $100,000,000 in 1976.
[2] Sources: U.S. corporate income tax returns, form 1120; District of Columbia gross earnings/gross receipts tax returns; all entries measured on a calendar year basis.
[3] Taxable income as defined for Federal income tax purposes plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[4] District of Columbia corporate franchise and personal property tax rates as of calendar year 1976 applied throughout.
[5] Numbers in parentheses are estimates of the personal property tax portion of the tax under each option, in thousands of dollars.
[6] District of Columbia corporate franchise and personal property tax rates as of year indicated.
[7] Economic income as defined in table 9.
[8] Same as tax base A, plus deductions for additions to bad debt reserves.
[9] Same as tax base B, plus interest on U.S. and State/local obligations.

Concentrating for the moment on savings and loan associations (Tables 13 through 16), Tax Base A is defined as taxable income as determined for federal income tax purposes, plus the D.C. gross earnings tax, less interest on U.S. obligations. This is a rather narrowly defined tax base, yet one which is in use in several states (cf. Table 3). Tax Base B is the same as Tax Base A but includes deductions for additions to bad debt reserves. Depending upon the year,[22] Tax Base B will be anywhere from 40 percent to 60 percent larger than Tax Base A. Finally, Tax Base C is defined as the same as Tax Base B, plus interest on U.S. and state/local obligations.

Two options are considered under each tax base. Option 1 applies the rates which existed under the D.C. corporate and personal property taxes as of calendar year 1976; that is, a 9.9 percent rate applied to each base, reduced by (estimates of) the personal property tax. Option 2 applies the corporate franchise rates which were in existence as of the year indicated in the tables to each base, again reduced by the (estimated) personal property tax. Figures in the tables show the estimated tax and effective rates which would have ensued under these tax options with parenthetical entries indicating the estimates of the personal property tax portion of the total tax burden which is shown in each option.[23]

The following conclusions arise from Tables 13 through 16:

1. Tax Base A is small relative to the other two tax bases, yielding about 25 percent of the existing 2 percent gross earnings tax on savings and loan associations and about 15 percent of revenues yielded under the 3 percent option (1976). Without the personal property tax, the yields under Tax Base A would be in the range of 15 percent to 20 percent of revenue raised under the current gross earnings tax on savings and loans. The burden for revenues raised under Tax Base A would be primarily borne by the large associations since under this option many small savings and loans (and some of those in the medium class) would pay only a personal property tax.

2. Tax Base B approximately doubles the tax yield from Tax Base A, but continues to fall well short of revenues raised under the existing gross earnings tax. Because this base is broadened relative to Tax Base A, the tax would impact more evenly on the large and medium associations whereas smaller associations under this option would continue to enjoy relatively reduced tax burdens.

3. Tax Base C brings revenues up to about 75 percent of what they are under the 2 percent gross earnings tax. The burden under

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[22] Recall the discussion in Section F on the changing bad debt allowance provisions under the 1969 Tax Reform Act.

[23] All entries are in thousands of dollars and all tax revenue estimates are inclusive of the personal property tax estimates.

Tax Base C is spread evenly among all associations with the higher burdens shown on the smaller associations due to the fact that the personal property tax has a greater proportionate weight within the total tax burden of these associations. It should be noted in comparing revenues between the existing gross earnings tax and that under Tax Base C, that the greatest difference in yields under the two taxes occurs in years such as 1974 and 1975 which were lean years for associations in terms of net to gross income.

Tables 17 through 19 repeat the above exercise for commercial banks within the District. The principal conclusions from these tables are:

1. Tax Base C would be as productive revenue-wise as would the gross earnings tax at a 4 percent level, but based on 1976 figures, Tax Base C would be 75–80 percent as productive as the gross earnings tax at the 6 percent rate.

2. Tax Base C is approximately 8 to 9 times the size of Tax Base A due to the inclusion in the former base of interest on U.S. obligations. The increase in Tax Base B over Tax Base A, which was the ratio of approximately 4 to 1 in 1976, is due to the inclusion in Tax Base B of interest on state and local securities. It should be noted that in 1974 and 1975, the ratio of Tax Base B to "A" was the order of 2 to 1, and the ratio of Tax Base C to "A" was around 4 to 1. This points out the volatility of these tax bases as a consequence of the investment patterns of financial institutions. Policy-makers should be aware of the volatility of these bases and should not rely simply on a given year's ratios or one year's set of observations as a foundation for making long-run revenue forecasts. As shown in these tables, bases such as Tax Base B and Tax Base A can fluctuate widely from year-to-year, resulting in significant revenue swings.

3. As to the relative burden of the net income tax options, a similar pattern appears to hold between small and large banks as with S. & L.'s The burdens are somewhat higher for larger banks under Tax Base A. This is primarily due to the fact that losses generated by the small banks would reduce the income tax portion of the total tax burden at or close to zero under a small based tax, such as Tax Base A.

4. As structured, Tax Base C would have a relative equal impact on commercial banks and savings and loan associations in terms of effective yields. This is true between the two industry groups as within them by size of association and bank. Under Tax Option C, revenues raised from the commercial banks would more closely approximate revenues raised under the existing gross earnings tax than they would for S. & L.'s.

TABLE 17.—ESTIMATED TAX AND EFFECTIVE TAX RATES, ALL DISTRICT OF COLUMBIA COMMERCIAL BANKS TAXES UNDER AN EXCISE TAX,[1] ALTERNATIVE (NET) INCOME BASES[2]

[Dollar amounts in thousands]

	1971	1972	1973	1974	1975	1976
Tax base A:[3]						
Tax—Option No. 1[4]	$1,078	$980	$950	$1,675	$2,085	$740
	[5] (240)	(274)	(300)	(363)	(335)	(325)
Tax—Option No. 2[6]	760	730	750	1,370	2,415	740
	(205)	(231)	(254)	(300)	(284)	(325)
Effective rate—Option No. 1 (percent)[7]	(2.1)	(2.0)	(2.0)	(3.0)	(3.1)	(1.2)
Effective rate—Option No. 2 (percent)	(1.5)	(1.5)	(1.6)	(2.4)	(3.6)	(1.2)
Tax base B:[8]						
Tax—Option No. 1	2,345	2,410	2,435	3,270	3,800	2,910
Tax—Option No. 2	1,590	1,745	1,875	2,660	4,500	2,910
Effective rate—Option No. 1 (percent)	(4.5)	(11.0)	(11.1)	(5.8)	(5.7)	(11.0)
Effective rate—Option No. 2 (percent)	(3.1)	(8.0)	(8.6)	(4.7)	(6.8)	(11.0)
Tax base C:[9]						
Tax—Option No. 1	5,335	5,055	5,030	5,940	6,890	6,230
Tax—Option No. 2	3,550	3,600	3,840	4,810	8,230	6,230
Effective rate—Option No. 1 (percent)	(10.3)	(10.5)	(10.5)	(10.5)	(10.4)	(10.4)
Effective rate—Option No. 2 (percent)	(6.9)	(7.5)	(8.0)	(8.5)	(12.4)	(10.4)

[1] Excise tax patterned after District of Columbia corporate franchise tax in terms of rates applied to alternative net income bases.
[2] Sources: U.S. corporate income tax returns, form 1120; District of Columbia gross earnings/gross receipts tax returns; all entries measured on a calendar year basis.
[3] Taxable income as defined for Federal income tax purposes plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[4] District of Columbia corporate franchise and personal property tax rates as of calendar year 1976 applied throughout.
[5] Numbers in parentheses are estimates of the personal property tax portion of the tax under each option, in thousands of dollars.
[6] District of Columbia franchise and personal property tax rates as of year indicated.
[7] Economic income as defined in table 10.
[8] Same as tax base A, plus interest on tax-exempt securities.
[9] Same as tax base B, plus interest on U.S. obligations.

TABLE 18.—ESTIMATED TAX AND EFFECTIVE TAX RATES LARGE DISTRICT OF COLUMBIA COMMERCIAL BANKS TAXED UNDER AN EXCISE TAX, ALTERNATIVE (NET) INCOME BASES[2]

[Dollar amounts in thousands]

	1971	1972	1973	1974	1975	1976
Tax base A:[3]						
Tax—Option No. 1[4]	$948	$900	$790	$1,550	$2,085	$685
	[5] (220)	(205)	(275)	(327)	(310)	(320)
Tax—Option No. 2[6]	666	670	625	1,270	2,415	685
	(186)	(209)	(230)	(275)	(260)	(320)
Effective rate—Option No. 1 (percent)[7]	(2.0)	(2.0)	(1.9)	(3.0)	(3.4)	(1.2)
Effective rate—Option No. 2 (percent)	(1.4)	(1.5)	(1.5)	(2.5)	(4.0)	(1.2)
Tax base B:[8]						
Tax—Option No. 1	2,125	2,200	2,110	2,980	3,625	2,565
Tax—Option No. 2	1,440	1,590	1,630	2,425	4,285	2,565
Effective rate—Option No. 1 (percent)	(4.5)	(5.0)	(5.0)	(5.8)	(5.9)	(4.6)
Effective rate—Option No. 2 (percent)	(3.1)	(3.6)	(3.9)	(4.7)	(6.9)	(4.6)
Tax base C:[9]						
Tax—Option No. 1	4,865	4,545	4,425	5,365	6,400	5,800
Tax—Option No. 2	3,235	3,250	3,325	4,350	7,640	5,800
Effective rate—Option No. 1 (percent)	(10.3)	(10.4)	(10.5)	(10.5)	(10.4)	(10.4)
Effective rate—Option No. 2 (percent)	(6.9)	(7.4)	(8.0)	(8.5)	(12.4)	(10.4)

[1] Banks with assets over $100,000,000.
[2] Sources: U.S. corporate income tax returns, form 1120; District of Columbia gross earnings/gross receipts tax returns; all entries measured on a calendar year basis.
[3] Taxable income as defined for Federal income tax purposes plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[4] District of Columbia corporate franchise and personal property tax rates as of calendar year 1976 applied throughout.
[5] Numbers in parentheses are estimates of the personal property tax portion of the tax under each option, in thousands of dollars.
[6] District of Columbia corporate franchise and personal property tax rates as of year indicated.
[7] Economic income as defined in table 10.
[8] Same as tax base A, plus interest on tax-exempt securities.
[9] Same as tax base B, plus interest on U.S. obligations.

TABLE 19.—ESTIMATED TAX AND EFFECTIVE TAX RATES, SMALL DISTRICT OF COLUMBIA BANKS[1] TAXED UNDER AN EXCISE TAX, ALTERNATIVE (NET) INCOME BASES[2]

[Dollar amounts in thousands]

	1971	1972	1973	1974	1975	1976
Tax base A:[3]						
Tax—Option No. 1[4]	$130	$80	$160	$125	$25	$55
	[5] (20)	(24)	(25)	(26)	(25)	(5)
Tax—Option No. 2[6]	94	60	125	100	24	55
	(19)	(22)	(24)	(25)	(24)	(5)
Effective rate—Option No. 1 (percent)[7]	(2.8)	(1.7)	(2.7)	(2.3)	(.5)	(1.2)
Effective rate—Option No. 2 (percent)	(2.0)	(1.3)	(2.1)	(1.8)	(.5)	(1.2)
Tax base B:[8]						
Tax—Option No. 1	220	210	325	290	175	345
Tax—Option No. 2	150	155	245	235	215	345
Effective rate—Option No. 1 (percent)	(4.8)	(4.5)	(5.5)	(5.3)	(3.7)	(7.8)
Effective rate—Option No. 2 (percent)	(3.3)	(3.3)	(4.2)	(4.3)	(4.5)	(7.8)
Tax base C:[9]						
Tax—Option No. 1	470	510	605	565	490	430
Tax—Option No. 2	315	350	465	460	590	430
Effective rate—Option No. 1 (percent)	(10.3)	(11.0)	(10.3)	(10.3)	(10.3)	(9.7)
Effective rate—Option No. 2 (percent)	(6.9)	(7.6)	(7.9)	(8.4)	(12.4)	(9.7)

[1] Banks with assets at or under $100,000,000 in 1976.
[2] Sources: U.S. corporate income tax returns, form 1120; District of Columbia gross earnings/gross receipts tax returns; all entries measured on a calendar year basis.
[3] Taxable income as defined for Federal income tax purposes plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[4] District of Columbia corporate franchise and personal property tax rates as of calendar years 1976 applied throughout.
[5] Numbers in parentheses are estimates of the personal property tax portion of the tax under each option, in thousands of dollars.
[6] D.C. corporate franchise and personal property tax rates as of year indicated.
Economic income as defined in table 10.
[8] Same as tax base A, plus interest on tax-exempt securities.
[9] Same as tax base B, plus interest on U.S. obligations.

Table 20 looks at the rates which would have to be applied to each of the three income bases analyzed in Table 13 in order to yield the revenues in the years shown as were raised under the gross earnings tax on savings and loan associations. In addition, two other bases are analyzed in a similar fashion:

1. A tax base patterned after the Maryland excise tax on savings and loan associations, which is essentially Tax Base C plus interest paid to depositors. This is listed as Tax Base D in Table 20.

2. A tax base defined by gross earnings as under the D.C. gross earnings tax base for commercial banks. This is shown in Table 20 as Tax Base E.

For each of the five tax bases, the first entry shows the rate which would have to be applied to that base in order to yield the revenue received under the existing tax. The second entry under each tax base option, which is the same for all tax bases for all years shown, denotes the effective yields[24] which would result from raising that revenue.

[24] Measured by the ratio of taxes to economic income.

TABLE 20.—RATES AND EFFECTIVE RATES NECESSARY TO YIELD REVENUES RECEIVED UNDER EXISTING DISTRICT OF COLUMBIA TAX, ALTERNATIVE TAX BASES—ALL DISTRICT OF COLUMBIA SAVINGS AND LOAN ASSOCIATIONS

[Rates in percent]

	1971	1972	1973	1974	1975	1976
Revenue under existing gross earnings tax (thousands)	$2,714	$3,282	$3,945	$4,479	$4,741	$7,754
Tax base A [2]						
Rate (tax/base)	56.1	35.1	40.1	76.6	58.0	57.5
Effective rate [3]	12.9	11.5	12.9	23.5	19.3	22.4
Tax base B [4]						
Rate	18.5	14.8	17.6	37.0	28.2	30.0
Effective rate			Same as tax base A			
Tax base C [5]						
Rate			Same as tax base A			
Effective rate						
Tax base D [6]						
Rate	1.9	2.0	2.2	2.5	2.4	3.5
Effective rate			Same as tax base A			
Tax base E [7]						
Rate	7.2	7.0	6.5	6.9	6.2	10.0
Effective rate			Same as tax base A			

[1] Sources: U.S. corporate income tax returns; District of Columbia gross earnings tax returns.
[2] Federal taxable income plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[3] Tax over economic income; economic income as defined in table 9.
[4] Tax base A plus bad debt deductions.
[5] Tax base B plus interest on governmental obligations.
[6] Tax base patterned after Maryland excise tax on S. & L.'s: essentially tax base C plus interest paid to depositors.
[7] Tax base defined by gross earnings for commercial banks as under the District of Columbia gross earnings tax.

Tables 21 through 23 show similar information for the three classifications—large, middle, small—of savings and loan associations, respectively. The primary conclusions arising from the presentation of these tables are:

1. Prohibitively high rates would have to be levied on Tax Bases A and B, in some cases for smaller associations at rates well in excess of the 100 percent of the base, in order to obtain yields equal to the existing gross earnings tax. Tax Base C, although a much broader tax base than either Bases A or B, still would require rates in the range of 20 percent in order to yield revenues equal to those raised under the existing tax.

2. As against assets, the gross earnings tax is regressive with the highest burdens under all measures falling on the smallest associations.

3. Tax Base D, which consists of economic income as defined herein plus interest to depositors, would yield revenues equal to the existing tax structure under a rate of about 2½ percent. As shown in Tables 21 through 23, a rate of 2½ percent on this base would yield higher revenues from larger associations than under the existing tax, and lesser revenues from smaller associations than under the existing tax. But as is the case with the gross earnings tax, this tax levied even at low rates would impose relatively high effective tax burdens, particularly in those years of low ratios of net to gross income.

4. Tax Base E, which is patterned after the gross earnings tax on commercial banks and which was analyzed and discussed at length in association with Table 11, would require a rate structure between 6 percent and 7 percent in order to yield revenues as under the 2 percent gross earnings tax, and rates of nearly 10 percent in order to raise revenues as under 3 percent tax which held in 1976.

TABLE 21.—RATES AND EFFECTIVE RATES NECESSARY TO YIELD REVENUES RECEIVED UNDER EXISTING DISTRICT OF COLUMBIA TAX, ALTERNATIVE TAX BASES—LARGE DISTRICT OF COLUMBIA SAVINGS AND LOAN ASSOCIATIONS [1]

[Rates in percent]

	1971	1972	1973	1974	1975	1976
Revenue under existing gross earnings tax (thousands)	$2,059	$2,442	$2,870	$3,243	$3,429	$5,666
Tax base A: [2]						
Rate (tax/base)	45.8	32.4	35.1	62.5	43.1	47.8
Effective rate [3]	12.2	11.5	12.9	21.7	17.3	20.8
Tax base B: [4]						
Rate	16.4	14.2	16.1	30.5	22.8	26.2
Effective rate			Same as tax base A			
Tax base C: [5]						
Rate			Same as tax base A			
Effective rate						
Tax base D: [6]						
Rate	1.8	2.1	2.2	2.4	2.3	3.3
Effective rate			Same as tax base A			
Tax base E: [7]						
Rate	7.3	7.2	6.6	6.1	6.4	10.1
Effective rate			Same as tax base A			

[1] Sources: U.S. corporate income tax returns; District of Columbia gross earnings tax returns; associations with assets over $250,000,000.
[2] Federal taxable income plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[3] Tax over economic income; economic income as defined in table 9.
[4] Tax base A plus bad debt deductions.
[5] Tax base B plus interest on governmental obligations.
[6] Tax base patterned after Maryland excise tax on S. & L.'s: essentially tax base C plus interest paid to depositors.
[7] Tax base defined by gross earnings for commercial banks as under the District of Columbia gross earnings tax.

TABLE 22.—RATES AND EFFECTIVE RATES NECESSARY TO YIELD REVENUES RECEIVED UNDER EXISTING DISTRICT OF COLUMBIA TAX, ALTERNATIVE TAX BASES—MIDDLE DISTRICT OF COLUMBIA SAVINGS AND LOAN ASSOCIATIONS [1]

[Rates in percent]

	1971	1972	1973	1974	1975	1976
Revenue under existing gross earnings tax (thousands)	$468	$627	$836	$981	$1,019	$1,618
Tax base A: [2]						
Rate (tax base)	78.0	30.5	49.1	121.1	231.5	113.1
Effective rate [3]	13.1	10.2	13.9	28.9	24.6	25.3
Tax base B: [4]						
Rate	20.3	12.7	19.5	73.2	56.6	43.5
Effective rate			Same as tax base A			
Tax base C: [5]						
Rate			Same as tax base A			
Effective rate						
Tax base D: [6]						
Rate	1.8	2.0	2.1	2.6	2.5	3.3
Effective rate			Same as tax base A			
Tax base E: [7]						
Rate	7.6	6.9	6.2	5.7	6.0	10.1
Effective rate			Same as tax base A			

[1] Sources: U.S. corporate income tax returns; District of Columbia gross earnings tax returns. Associations with assets between $100,000,000 and $250,000,000.
[2] Federal taxable income plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[3] Tax over economic income; economic income as defined in table 9.
Tax base A plus bad debt deductions.
[5] Tax base B plus interest on governmental obligations.
[6] Tax base patterned after Maryland excise tax on S. & L.'s: essentially tax base C plus interest paid to depositors.
[7] Tax base defined by gross earnings for commercial banks as under the District of Columbia gross earnings tax.

TABLE 23.—RATES AND EFFECTIVE RATES NECESSARY TO YIELD REVENUES RECEIVED UNDER EXISTING DISTRICT OF COLUMBIA TAX, ALTERNATIVE TAX BASES—SMALL DISTRICT OF COLUMBIA SAVINGS AND LOAN ASSOCIATIONS[1]

[Rates in percent]

	1971	1972	1973	1974	1975	1976
Revenue under existing gross earnings tax (thousands)	$187	$215	$239	$255	$292	$470
Tax base A:[2]						
Rate (tax/base)	(3)	(3)	(3)	(3)	(3)	(3)
Effective rate[4]	32.2	22.1	20.2	38.2	56.7	52.0
Tax base B:[5]						
Rate	(3)	300.0	60.0	1,275.0	(3)	96.0
Effective rate			Same as tax base A			
Tax base C:[6]						
Rate			Same as tax base A			
Effective rate						
Tax base D:[7]						
Rate	2.5	2.4	2.7	3.1	3.6	5.0
Effective rate			Same as tax base A			
Tax base E:[8]						
Rate	5.9	5.7	5.7	5.6	5.4	8.1
Effective rate			Same as tax base A			

[1] Sources: U.S. corporate income tax returns; District of Columbia gross earnings tax returns. Associations with assets less than $100,000,000.
[2] Federal taxable income plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[3] Base less than or equal to zero.
[4] Tax over economic income; economic income as defined in table 9.
[5] Tax base A plus bad debt deductions.
[6] Tax base B plus interest on governmental obligations.
[7] Tax base patterned after Maryland exicse tax on S. & L.'s: essentially tax base C plus interest paid to depositors.
[8] Tax base defined by gross earnings from commercial banks as under the District of Columbia gross earnings tax.

Finally, Tables 24 through 26 present the results of similar analyses conducted for commercial banks, by the large and small asset classes, and for all banks. The conclusions are similar to those registered above for savings and loan associations with the differences more in matters of degree rather than substance:

1. The existing gross earnings tax falls heaviest in terms of effective rate burdens on smaller banks.

2. The rates which would be necessary in order to gross yields equal to that under the existing tax would be prohibitively high on Tax Bases A and B.

3. Under Tax Base C, rates in the range of 9 to 9½ percent would have yielded revenues equal to the existing gross earnings tax prior to the 1976 rate changes, with slightly higher rates required in the case of smaller banks. In order to yield revenues under the gross earnings tax as it currently exists (6 percent as opposed to 4 percent of gross earnings), a rate of about 14 percent would have to be applied to Tax Base C. Higher rates are called for in the case of smaller banks. Alternatively, a 13.7 percent rate across the board would yield the same revenues as under the existing tax with larger banks paying more than they do under the existing tax structure and smaller banks paying less.

4. A tax on commercial banks applied to a gross earnings base as defined for savings and loan associations (Tax Base D in Tables 24 through 26) would yield the same revenues as under the pre-1976 gross earnings tax on commercial banks at a 2½ percent rate, slightly higher for smaller banks. A rate of 3½ to 4 percent would be needed in order to match revenues per the present tax structure of D.C. banks. Greater analysis and detail as to this option is spelled out in Table 12.

TABLE 24.—RATES AND EFFECTIVE RATES NECESSARY TO YIELD REVENUES RECEIVED UNDER EXISTING DISTRICT OF COLUMBIA TAX, ALTERNATIVE TAX BASES—ALL DISTRICT OF COLUMBIA COMMERCIAL BANKS [1]

[Rates in percent]

	1971	1972	1973	1974	1975	1976
Revenues under existing gross earnings tax (thousands)	$3,540	$3,794	$4,376	$5,321	$6,089	$8,281
Tax base A: [2]						
Rate (tax base)	40.6	51.3	63.4	38.8	36.0	181.0
Effective rate [3]	6.8	7.9	9.1	9.4	9.6	13.7
Tax base B: [4]						
Rate	16.5	17.3	20.0	17.8	17.9	31.0
Effective rate			Same as tax base A			
Tax base C: [5 6]						
Rate			Same as tax base A			
Effective rate						
Tax base D: [7]						
Rate	2.5	2.6	2.8	2.4	2.5	3.6
Effective rate			Same as tax base A			

[1] Sources: U.S. corporate income tax returns; District of Columbia gross earnings tax returns.
[2] Federal taxable income plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[3] Tax over economic income; economic income as defined in table 10.
[4] Tax base A plus interest on tax-exempt securities.
[5] Tax base B plus interest on U.S. obligations.
[6] A tax patterned after the Maryland tax on banks would yield results as under tax base C.
[7] Tax base defined by gross earnings for S. & L.'s as under the District of Columbia gross earnings tax.

TABLE 25.—RATES AND EFFECTIVE RATES NECESSARY TO YIELD REVENUES RECEIVED UNDER EXISTING DISTRICT OF COLUMBIA TAX, ALTERNATIVE TAX BASES—LARGE DISTRICT OF COLUMBIA COMMERCIAL BANKS [1]

[Rates in percent]

	1971	1972	1973	1974	1975	1976
Revenues under existing gross earnings tax (thousands)	$3,090	$3,306	$3,873	$4,757	$5,511	$7,471
Tax base A: [2]						
Rate (tax/base)	40.8	48.8	70.4	37.3	30.2	53.5
Effective rate [3]	6.6	7.6	9.2	9.3	8.9	13.7
Tax base B: [4]						
Rate	15.9	16.6	20.5	17.5	16.3	32.5
Effective rate			Same as tax base A			
Tax base C: [5 6]						
Rate			Same as tax base A			
Effective rate						
Tax base D: [7]						
Rate	2.4	2.6	2.8	2.4	2.4	3.6
Effective rate			Same as tax base A			

[1] Sources: U.S. corporate income tax returns; District of Columbia gross earnings tax returns. Banks with assets over $100,000,000.
[2] Federal taxable income plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[3] Tax over economic income; economic income as defined in table 10.
[4] Tax base A plus interest on tax-exempt securities.
[5] Tax base B plus interest on U.S. obligations.
[6] A tax patterned after the Maryland tax on banks would yield results as under tax base C.
[7] Tax base defined by gross earnings for S. & L.'s as under the District of Columbia gross earnings tax.

TABLE 26.—RATES AND EFFECTIVE RATES NECESSARY TO YIELD REVENUES RECEIVED UNDER EXISTING DISTRICT OF COLUMBIA TAX, ALTERNATIVE TAX BASES—SMALL DISTRICT OF COLUMBIA COMMERCIAL BANKS[1]

[Rates in percent]

	1971	1972	1973	1974	1975	1976
Revenues under existing gross earnings tax (thousands)	$450	$488	$503	$564	$578	$810
Tax base A:[2]						
Rate (tax/base)	71.3	73.7	35.9	60.0	(3)	154.0
Effective rate[4]	10.3	10.6	8.5	10.3	12.3	18.3
Tax base B:[5]						
Rate	22.0	25.0	16.8	21.2	53.5	23.2
Effective rate			Same as tax base A			
Tax base C:[6 7]						
Rate			Same as tax base A			
Effective rate						
Tax base D:[8]						
Rate	2.9	3.0	2.7	2.6	2.8	4.2
Effective rate			Same as tax base A			

[1] Sources: U.S. corporate income tax returns; District of Columbia gross earnings tax returns. Banks with assets $100,000,000 or less.
[2] Federal taxable income plus District of Columbia gross earnings tax, less interest on U.S. obligations.
[3] Negative or zero tax base.
[4] Tax over economic income; economic income as defined in table 10.
[5] Tax base A plus interest on tax-exempt securities.
[6] Tax base B plus interest on U.S. obligations.
[7] A tax patterned after the Maryland tax on banks would yield results as under tax base C.
[8] Tax base defined by gross earnings for savings and loans as under the District of Columbia gross earnings tax.

X. Economic Income, Taxation and Regulation

In attempting to draw comparisons among financial institutions on equity grounds as to the impact of existing or proposed tax policies,[25] it is essential that a basis for such analyses and comparisons be established which is common to all parties involved. In evaluating whether or not a given tax policy is equitable in its impact among various taxpayers, or whether a given tax may be considered burdensome from the standpoint of the taxpayer in either an absolute or relative sense, concepts of equality and measures of ability to pay must be determined. The notion of economic income is such a concept and based upon this notion much can be said about the nature of a tax program from both equity and burden standpoints. In a broad sense, economic income is usually defined as consumption plus changes in net worth from period to period, less expenses associated with generating these income flows. In dealing with such matters of equity and relative tax burdens of alternative tax systems, the practice most generally employed is one of comparing effective tax rates of the institutions in question using calculations involving the ratio of taxes borne to economic income. This approach is used widely throughout this paper as to equity questions surrounding the D.C. gross earnings tax as well as making comparisons of alternative tax options from the standpoint of tax burden considerations.

In the case of financial institutions, the measure of economic income most generally used by analysts has been taxable income for federal tax purposes, plus bad debt deductions in excess of losses, tax-exempt interest, and a certain percentage of inter-corporate dividends received.[26]

[25] As well as to questions of relative tax burdens on a given organization or industry group of alternative tax programs.
[26] This latter adjustment is primarily relevant as to mutual savings banks.

It is important, however, to understand just what is included in such measures and what are some of their shortcomings. Among the issues which bear on the tax treatment of savings and loan associations vis-à-vis that of commercial banks is the direct influence exerted by regulators. Tax policy statements based upon the aforementioned measures of economic income and effective tax rates ignore the impact of regulation on the economic income of financial institutions (or any industry group for that matter). In the case of financial institutions, regulations generally limit the type of assets, liabilities, or services which an intermediary may purchase or offer. For example, commercial banks presently are permitted to offer a wider variety of services than are savings and loan associations. Such regulatory powers represent a competitive advantage to commercial banks over S&Ls, enabling banks to acquire customers (and thereby funds) through non-pricing needs. One can regard this as a net cost of regulation to savings and loans. In essence, the question here is: "What are the additional costs imposed upon savings and loan associations because they are not regulated in the same manner as commercial banks (as far as these 'full service' powers are concerned)?" [27] Assuming that the extent of such costs can be determined, estimates can be derived as to the additional return on assets or the increase in income which would be necessary in order to offset this relative cost of regulation. In assessing the tax treatment of different financial institutions then, an economic income base used for comparative purposes on both equity and relative tax burden grounds should net out such costs of regulation as extraordinary expenses as well as include any net benefits of regulation as income items.

As a further example of the kind of imputations which would be necessary in order to adjust for regulatory differences between competing financial institutions, the prohibition of interest on demand deposits operates as a net benefit to commercial banks. It does so by permitting banks to raise funds below market rates. Although banks do pay implicit rates on demand deposits by absorbing costs, evidence shows these to be below rates on time and savings accounts. Accordingly, S. & L.'s must pay interest on all their deposits at rates comparable to those paid by banks on only part of their deposits; namely, savings deposits. The result is that a bank would receive a higher level of net income, or earnings on assets, than would an S. & L. for any given level of gross income because of this regulatory difference.

On the other side of the coin, it can be argued that S. & L.'s benefit from differences in reserve requirements which exist between them and commercial banks. Commercial banks, which are members of the Federal Reserve System, are subject to reserve requirements on their deposits which are higher than those on S. & L.'s and which require certain reserves to be held in a non-earning form. By comparison, S. & L.'s may keep their reserves in such things as short-term government securities, which earn interest. These requirements lower the potential rate of return on bank portfolios by tying up a portion of their assets in non-earning form. Accordingly, this regulatory nuance shows up as a net benefit to S. & L.'s relative to commercial banks requiring a greater return on a bank's portfolio in order to

[27] This question, of course, applies for any regulatory differences which may exist.

compensate for this regulatory constraint. Reinforcing this reserve effect is that S. & L.'s have access to lower cost borrowing facilities than do banks. Advances from the Federal Home Loan Bank system generally carry lower interest rates and longer terms than do comparable advances from the Federal Reserve System. The differential is compounded by the fact that commercial banks must often borrow through the federal funds' market. Since federal funds rates are higher than the Federal Reserve discount rate, an additional cost may be considered imposed on banks through such regulation.

There are other regulatory considerations when comparing financial institutions, such as deposit insurance and branching restrictions. In addition, there are questions as to benefits and costs accruing because of organizational form. Thus, mutuality permits funds to be raised at lower costs than by equity shares, a benefit to federal S. & L.'s compared to stock forms of business, such as commercial banks. Limited evidence which is available would indicate that bank holding companies, because of their organizational form, are more successful at reducing tax burdens than non-holding companies.

The intent here, however, is not one of providing a complete litany of regulatory benefits and cost which accrue to S. & L.'s and banks. Rather, it is one of focusing on the interplay between taxation and regulation within the context of the economic income notion. Determination of the income (and asset) effects of regulatory and organizational differences permits the development of more meaningful measures of evaluating tax equity issues. Perhaps more importantly, this sort of thing opens the doors for a more integrated approach to policy by those who are authorized to piece together tax programs and those who are involved in matters of regulation.

As one may imagine, such considerations involve rather tricky and detailed measurement requirements which are well beyond the ken of this current exercise. For informational purposes, analyses which have been conducted as to the relative impact of regulation on economic income and thereby the effective tax burdens of commercial banks vis-a-vis those of savings and loan associations indicate that the net effect is one of a slight benefit for commercial banks resulting in reductions in their effective tax rates at a federal level from 1 to 2 percent.[28]

One of the regulatory considerations which has particular relevance to the D.C. gross earnings tax are those related to net worth. Briefly, financial institutions are required by regulation to maintain certain net worth ratios from the standpoint of security to the depositor and security to the financial system. For savings and loan associations, this requirement is clearly spelled out as a net worth-to-savings deposit ratio of 5 percent over a five-year moving average. Regulation for commercial banks in this vein, although not spelled out in such absolute numerical detail, is nonetheless as restrictive. Because, as has been shown in previous sections of this paper, the effective burden of the D.C. gross earnings tax is high by all measures developed, the notion

[28] See Kenneth R. Biederman and John A. Tuccillo, "Taxation and Regulation of the Savings and Loan Industry," D. C. Heath Company, Lexington Books, 1976, pp. 37–65. Also see L. Lapidus, "Differences Between Commercial Banks and Mutual Savings Banks: The Issue of Fair Competition," in "Public Policy Towards Mutual Savings Banks in New York State," Federal Reserve Bank of New York, June 1974, pp. 199–228.

of the interplay between this tax (and alternatives to it) and these net worth (regulatory) constraints is important.

Looking at net worth-to-deposit ratios and net worth-to-asset ratios for commercial banks and savings and loan associations in the District of Columbia over the past several years indicates that in spite of its relatively high effective burden, the D.C. gross earnings tax has not caused these ratios to drop to any alarmingly low levels from the standpoint of regulatory concerns. In 1970, the net worth-to-asset ratio for commercial banks in the District of Columbia stood at 8.7 percent compared to 8.7 percent for banks in Maryland, 8.3 percent for banks in Virginia, and an 8.5 percent ratio for commercial banks nationwide. By 1976, the net worth-to-asset ratio for commercial banks in the District had actually increased to 9.5 percent, where elsewhere they had fallen—8.0 percent in Maryland, 8.2 percent in Virginia, and 8.3 percent nationwide.

Net worth-to-assets (and net worth-to-savings) ratios of savings and loan associations in the District also show up at healthy levels relative to other associations in neighboring states and the United States. In 1970, the net worth-to-assets ratio of savings and loan associations in the District were at 7.1 percent compared to 6.8 percent in Maryland, 6.9 percent in Virginia, and 7.0 percent industrywide. By 1976, in spite of significant increases in the effective tax burden of the gross earnings tax relative to that in the neighboring states and the United States (cf. Table 8), the net worth-to-asset ratio of S. & L.'s in the District was 6.8 percent, compared to 6.0 percent in Maryland, 5.0 percent in Virginia, and a U.S. average of 5.6 percent.

These alone do not tell the entire story in that net worth figures for financial institutions in the District may be healthy relative to those of surrounding areas and the United States because of relatively slow growth of depository institutions in the District. Clearly this has also been the case, as is brought out in Table 5. Thus one is led to the subsequent question as to what extent net worth considerations have played upon constraining the growth of financial institutions in the District and to what extent such constraints are tax-induced by the gross earnings tax. Unfortunately, there is far too insufficient information and evidence available here to draw definitive conclusions. However, in spite of the relative high burden of the gross earnings tax on financial institutions in the District, their net worth positions seem to be of a level that they would not be imposing constraints on growth.

In sum, questions of tax policy should not be decided in a vacuum. Regulatory issues, both in an absolute and a relative sense, are important and should be considered by policy makers. In addition, because taxes are a socially-induced cost of doing business, questions of the interplay between tax systems and social objectives needs to be considered. It is to this that we now turn.

XI. The Use of Tax Incentives

One of the key issues surrounding the taxation of financial institutions is the use of tax incentives of one form or another in order to stimulate investment activity in certain socially desirable areas. Spe-

cifically, the final report of the D.C. Commission on Residential Mortgage Investment has suggested as part of its proposed District Depository Act a "tax incentive law which would give District tax credits to financial institutions making loans to specific groups of borrowers." [29] This section takes a look at the use of tax incentives in order to stimulate investment by financial institutions in the District by developing an analysis surrounding the use of tax credits for residential mortgage investment within the context and spirit of the above proposal. It should be stressed at the outset that this analysis could be generalized to investment instruments other than residential mortgages.

The approach employed is to look at the nature of a tax subsidy (credit) in terms of its impact on rates of return on the investment instrument. Suppose within the context of earlier sections that a D.C. tax were imposed on the (net) income of financial institutions at rate t. Assume as part of this tax that a tax credit (TC) would be available equal to some specified percentage of interest on certain designated assets. Let $\bar{i}$ be the gross rate of return on an asset which would qualify for the tax credit under the provisions of the tax. Alternatively, let r be the gross return on an asset which would not qualify for the tax credit provision.

If we let i equal the before tax return from $\bar{i}$, and r the before tax return originating from $\bar{r}$, then $(t)(i)$ and $(t)(r)$ would represent their after tax returns, respectively.[30] But $(t)(i)$ is not the net, after tax return originating from $\bar{i}$, since an allowance must now be made for the tax subsidy (credit). Letting i' equal the net, after tax return originating from $\bar{i}$, and r' equal the after tax return originating from $\bar{r}$, then

(1) $$i' = (l-t)i + (TC)i; \text{ and,}$$

(2) $$r' = (l-t)r$$

Equality of the after tax returns on the two assets implies:

(3) $$(l-t)i + (TC)\bar{i} = (l-t)r$$

Now, if the nonqualifying asset is going to earn the same rate of return as the qualify one,[31] then $r > i$; or,

(4) $$r = i + X \qquad \text{where } X > 0.$$

Inserting expression (4) into expression (3) yields

(5) $$(l-t)i + (TC)\bar{i} = (l-t)(i+X)$$

[29] Government of the District of Columbia, Commission on Residential Mortgage Investment, "Strategy for Change: Housing Finance in Washington, D.C.," 1977, p. 74.
[30] Returns after the D.C. tax.
[31] Qualifying for the tax credit.

Subtracting $(l-t)$ from both sides of equation (5) gives us

(6) $$(TC)\bar{i}=(l-t)X; \text{ or,}$$

(7) $$X=\frac{(TC)\bar{i}}{(l-t)}$$

Thus, the gross return $\bar{i}$ must be increased by the amount X for the after tax returns on the qualified and nonqualified assets to be the same.[32]

As an example, suppose we have a 10 percent tax on financial institutions which allows for a tax credit of 5 percent on the interest of a qualified mortgage with a contract rate of 9 percent. Then, by expression (7) above, a nonqualified asset must have a gross yield of 9.50 percent in order to have the same after tax[33] return as the subsidized (qualified) mortgage. Put another way, the tax credit under the conditions specified amounts to a 50 basis point subsidy on the 9 percent mortgage. The relevant calculations are shown below, using notation as defined previously.

$\bar{i}$	0.0900
Cost-of-funds[34]	.0720
i	.0180
D.C. tax	.0018
Tax credit (0.05) (0.09)	.0045
i'	.0207

The gross interest subsidy necessary to compensate for the 5 percent tax credit is:

$$X=(0.05)\ (0.09)/(0.9)=0.0050$$

Therefore:

r	0.0950
Cost-of-funds	.0720
r	.0230
D.C. tax	0.0023
r′	.0207

We can get a feel for what all this means by pushing a few numbers around from Tables 5 and 6.

In 1976, S & L's in the District had gross income on mortgage loans of nearly $245 million. Figures provided from the Report of the D.C. Commission on Residential Mortgage Investment show between 15–20 percent of these loans being made in the District. If one assumes homogeneity in yields, then a 5 percent credit on the interest of D.C. originated loans by S. & L.'s in the District would result in an annual revenue loss of over $2 million, or nearly 40 percent of revenues raised under the 2 percent gross earnings tax. Using a similar methodology for District banks, coupled with figures from the D.C. Residen-

[32] This assumes that the cost of funds is the same in the purchase of either asset.
[33] Return after D.C. tax.
[34] For purposes of this example, cost-of-funds are assumed at 80 percent of $\bar{i}$.

tial Commission Report which show about 40 percent of bank residential loans originated in the District, the estimated annual revenue loss would be around $3/4 million or 9–10 percent of revenues under the 6 percent D.C. gross earnings tax.

There are ways to limit this revenue loss. The credit could be restricted to loans originated in selected sections of the District with the extent of the coverage constrained by (estimates of) tolerable revenue losses. This sort of selectivity could create considerable administrative and compliance costs. In addition, because the tax subsidy is a function of interest on qualified loans however defined, the revenue loss would increase annually with increased (net) lending activity in the qualified assets.

A second approach would be to limit the subsidy (credit) to interest in the first year of the loan inasmuch as once the loan is made it is non-productive to continue to subsidize said loan. The problem here is that whereas revenue losses are constrained, the financial incentive of the tax credit virtually vanishes. Thus, on a $50,000 mortgage at a contract rate of 10 percent, a 5 percent credit would amount to $250—perhaps a nice evening at the poker table but hardly the sort of thing that major financial decisions are made of!

One can continue to conjure up various sorts of trade-offs with different levels of rates, credits, and investment instruments, but the nature of the exercise boils down to the folowing:

1. Broad-based tax incentives would result in sizeable revenue losses.
2. Attempts to reduce revenue-loss by narrowing the scope of the tax incentive will add to administrative and compliance costs.
3. It is very difficult to design (and enforce) any tax incentive which is not going to result in unproductive revenue loss.
4. There is no way, a priori, to assess the cost-effectiveness of a 50 basis point subsidy,[35] so that one must seriously question the use of such items in view of the considerations raised above. At the least, more research should be conducted into the potential cost-effectiveness of tax subsidies as stimulants to investment by financial institutions which would be consistent with the social goals of the District.

L. SUMMARY AND RECOMMENDATIONS

Financial institutions have been taxed under a gross earnings tax in the District of Columbia dating back to 1902. Unlike most States, the D.C. gross earnings tax is doing a business tax which is measured by the gross earnings of a financial institution rather than its net income. This paper has looked at this unique tax from several aspects within the context of such considerations as equity between competing institutions, tax burden analysis, alternative tax systems, financial performance and stability, regulation, and the use of tax subsidies. The following conclusions and recommendations summarize the principal findings of the paper:

1. A very wide range of state and local tax burdens exists for financial institutions not only among the various States, but frequently within States as well. The District of Columbia is among the several

[35] Which would vary, of course, depending on such things as interest, credit, and tax rates.

high tax burden States both for commercial banks and savings and loan associations.

2. Commercial banks in the District of Columbia have experienced significant increases in their operating expenses over the course of this decade due to increased interest paid on deposits. In spite of such increases, operating expenses for D.C. banks are still below the U.S. average and that of banks in the neighboring States of Maryland and Virginia. When interest and dividends paid are included with operating expenses of savings and loan associations, there has been little increase in these costs over the decade. For District associations, such costs have actually declined in relation to gross operating income.

3. Commercial banks and savings and loan associations in D.C. have grown at about half the pace of banks and S. & L.'s in Maryland, Virginia, and the United States.

4. Nationwide, federal taxes have been decreasing for commercial banks while increasing for savings and loan associations. This general pattern is evidenced in the neighboring states of Maryland and Virginia, particularly for commercial banks, but has not been true in the District of Columbia. State tax burdens have remained relatively stable throughout the United States, Virginia, and Maryland with only slight increases registered in the case of savings and loan associations. Again, this has not been true in the District of Columbia, particularly for the savings and loan associations, where state tax burdens as a percent of net "economic" income have increased several-fold over the past six years.

5. Two important considerations to which policymakers should be aware in designing a tax on financial institutions at the state/local levels which would be patterned after the federal tax:

(a) Financial institutions because of the nature of the business can significantly alter the relative size of their tax base through investments.

(b) As in the case of savings and loan associations with the bad debt deduction, the tax base, and thereby the tax, is often altered by federal action.

6. The existing D.C. gross earnings tax on financial institutions:

(a) Imposes uneven and often excessive tax burdens which are bound to have implications for financial planning and performance;

(b) Historically has imposed somewhat higher burdens on S. & L.'s than on commercial banks. Since the rate changes under the Revenue Act of 1975, this has more or less equalized;

(c) Imposes a greater tax burden on financial institutions than on non-financial industry, given existing rate structures and tax bases;

(d) Impacts smaller banks and S. & L.'s more so than large ones;

(e) Generally does not recognize fluctuations in yield spreads and cost differentials between and within industry groups.

7. An excise tax based upon a net income measure would eliminate or improve upon most of the objections raised to the gross earnings tax.

8. An excise tax at rates as under the D.C. franchise tax levied on a net income base defined as taxable income for federal tax purposes plus income taxes, less interest on U.S. obligations, would:

(a) Yield at about 20–25 percent of revenues from the existing tax on savings and loan associations;

(b) Yield anywhere from 10–30 percent of revenues from the existing tax on commercial banks, depending on their investment pattern.

9. An excise tax like that above on S. & L.'s but inclusive of loss reserve deductions in the base would yield about twice that of the former base, and about 50 percent of revenues from the gross earnings tax.

10. An excise tax on commercial banks like that in No. 8 above but inclusive of interest on all state/local obligations would yield from one-third to one-half of the revenues from the gross earnings tax on commercial banks, again depending on investments.

11. An excise tax as in items No. 9 and No. 10, but inclusive of interest on U.S. obligations would yield 75–85 percent of revenues from the D.C. gross earnings tax on depository institutions, depending on economic conditions and investment patterns. Of the three, this would have the most uniform impact between banks and S. & L.'s as well as by size of institution. Because of this, the stability of the tax base, and the revenue considerations, this base is preferred over other options.

12. Whether the broad-based net income tax recommended in item No. 11 above were to be adopted or some variation thereof, policymakers should carefully assess all so-called tax incentives which would reduce the base and (effective) tax burdens. This is not to dismiss all such incentives—rather to caution against devices which may result in sizeable (and unproductive) revenue losses. The gross earnings tax on depository institutions is an equitable, uncertain, and often (excessively) burdensome tax. A restructuring of the tax system to a net income based tax on financial institutions is a reform which is warranted. Such reform may result in revenue losses compared to the gross earnings tax depending upon any number of considerations and circumstances as referenced throughout this paper. Such reform coupled with a panoply of exceptions in the name of "incentives" is not advisable.

TAXATION OF BUSINESS INCOME

(By Kenneth Ainsworth, Department of Economics, Allegheny College)

I. Introduction

The taxation of business income by state and local governments has been a perennial challenge to tax administrators and economists. The reasons are not obscure. Revenue must be raised from taxpayers which are often only partly, and not always clearly, within the jurisdiction of the taxing authority. Nevertheless, multi-jurisdictional and single jurisdictional taxpayers must be indiscriminately taxed. Furthermore, in the interest of fairness and economic efficiency, businesses which are essentially similar must be taxed similarly. Human persons and property, whether organized within the legal framework of corporations, proprietorships or partnerships, must bear the same tax responsibilities. To do otherwise would encourage taxpayers to choose one legal form over another on the basis of tax differentials rather than by reference to the general possibilities of the efficient conduct of business. There is finally the need to recognize that each state or local taxing authority is a jurisidictionally distinct entity with thousands of social and economic connections to the rest of the nation.

The District of Columbia is a distinct jurisdiction with special characteristics which condition the development of efficient and equitable business taxes. That the District is the seat of the national government is sufficient to make it a unique jurisdiction. The overwhelming presence of the national government plus the geographic limits of the District of Columbia are the major influence on the size and composition of business activity within the District. Nearly one-half of all payroll employment in the District of Columbia is government employment. Government employment and the proportionately smaller employment in the private sector is outlined in Table I. It shows that employment in all other industry divisions is relatively less in the District than for the entire United States, except for the services category. Manufacturing provides less than three per cent of payroll employment in the District which is about one-eighth the importance of manufacturing in the United States. Services, on the other hand, account for more than one-fourth of the employment in the District, while in the nation the same services employ less than one-fifth of all payroll employment.

The income generated by payroll employment in combination with the incomes of the self-employed, interest, dividends, rent and transfer payments constitute the personal income of those with employment or other business in the District of Columbia. The people and businesses earning this income as well as those who employ them are more often than not multi-jurisdictional citizen-taxpayers. Less than half of this income earned within the District is earned by residents of the District.

Table II which presents this information for the District and for the counties surrounding the District, shows that the District has an extreme relationship with its non-resident work force.

TABLE I.—DISTRICT OF COLUMBIA AND UNITED STATES PAYROLL EMPLOYMENT BY BROAD INDUSTRY CATEGORIES,[1] SEPTEMBER 1976

	In thousands		Percent	
	District of Columbia	United States	District of Columbia	United States
Government	264	15, 208	45. 5	19. 0
Mining		807		1. 0
Construction	20	3, 564	3. 4	4. 4
Manufacturing	16	19, 194	2. 8	23. 9
Transportation and public utilities	29	4, 536	5. 0	5. 7
Wholesale and retail trade	67	17, 705	11. 6	22. 1
Finance, insurance and real estate	33	4, 357	5. 7	5. 4
Services	151	14, 816	26. 0	18. 5
Total	580	80, 187	100. 0	100. 0

[1] Source: U.S. Department of Labor, Bureau of Labor Statistics, "Employment and Earnings," December 1976.

TABLE II.—NET LABOR AND PROPRIETORS' INCOME BY PLACE OF WORK AND BY PLACE OR RESIDENCE FOR THE DISTRICT OF COLUMBIA, THE DISTRICT OF COLUMBIA SMSA, AND THE COUNTIES IN THE SMSA,[1] 1974

[Dollar amounts in millions]

	Income		Ratio of place of residence to place of work (percent)
	Place of work	Place of residence	
District of Columbia	$7, 599	$3, 313	44
District of Columbia SMSA	16, 700	16, 336	98
Maryland counties:			
Charles	137	244	178
Montgomery	2, 685	3, 688	137
Prince Georges	2, 034	3, 346	165
Virginia counties:			
Arlington	1, 482	1, 015	68
Fairfax	1, 423	3, 094	217
Loudoun	137	190	139
Prince William	364	633	174

[1] Source: U.S. Department of Commerce, Bureau of Economic Analysis, "Local Area Personal Income, 1969–74."

The scope of operations of employers is also multi-jurisdictional. The dominant employer categories are by their very nature multi-jurisdictional. The federal government serves the nation, and the District of Columbia serves the servants of the federal government. The one prominent manufacturing industry in the District (i.e., printing and publishing) produces products designed for national circulation.

A closer examination of Table II underscores the situation of the District of Columbia compared with surrounding counties. SMSAs generally have residents who earn as much income as is earned at places of work within the particular SMSA. The SMSA which includes the District of Columbia is no exception where residents earn 98 per cent as much as is earned within the SMSA. Nevertheless, within the SMSA, the contrasts are enormous. Residents of the District itself earn only 44 per cent as much as is earned at places of work within the District, while the residents of the Maryland counties and the Virginia counties, excepting Arlington, earn from 137 per cent to

217 per cent as much income as is earned at places of work within the counties.

There is little, if any, of the economic activity within the District of Columbia which is obviously and exclusively District activity. The political boundaries of the jurisdiction, even though they are unusually rigid, are no barrier to the multitude of relationships which integrate the business of the District with the business of its region and the entire nation. The first step toward an efficient, equitable and productive business tax required a recognition of the special ways in which the production of services and products within this geographically limited jurisdiction relates to its surroundings. More specifically, the identification of a tax base requires a general definition of taxable income and the development of a reasonable method for assigning a part of the aggregate tax base to the District of Columbia.

II. State Business Income Tax Bases

The business income tax base for a sub-national jurisdiction is some reasonably determined part of the entire income which is derived from the taxpayers total business. While terminologies such as interstate commerce and intrastate commerce will persist, they do not give much guidance in matters of state taxation, because they do not identify or describe what is taxable income or what is not taxable income. Nondiscriminatory taxation is required, which in turn requires reasonable assignment of a part of the aggregate, usually national, base to the sub-national jurisdiction which would levy the tax.[1] Pragmatically, the tax base must be defined and then apportioned to the taxing jurisdiction.

CURRENT PRACTICE IN THE DISTRICT OF COLUMBIA

The District of Columbia levies a franchise income tax on corporate and non-corporate business income which it defines as gross receipts minus costs of goods sold, plus other income items such as interest, rent and capital gains minus other deductions such as salaries and depreciation. The refinements of this general definitions and procedures. The evaluation of inventories, the determination of capital gains, depreciation with its special provisions and allowances, lives of assets schedule and pension plans are dealt with essentially as the federal government deals with them.

Additional information from the federal tax reports is also required by the District. Since 1963, the federal government requires a schedule which reconciles net income for tax purposes as well as a schedule which reconciles book income with taxable income. Table III summarizes the relationship between federal tax income and book income for corporations in 1972. The District has a similar requirement. In summary, there are some common definitions and some sharing of useful information, but the District does not provide for the use of the federal definitioins of income in the determination of taxable District income.

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[1] *Complete Auto Transit, Inc. v. Brady, Chairman, Mississippi State Tax Commission.* U.S. Supreme Court, Docket No. 76–29, March 7, 1977.

TABLE III.—NET INCOME FOR TAX PURPOSES AND BOOK NET INCOME AS REPORTED ON U.S. CORPORATE TAX RETURNS FOR SELECTED INDUSTRY GROUPS,[1] 1972

[Dollar amounts in millions]

	Net income		
	Tax return	Book	Ratio of tax return to book
			Percent
All industries	$66,840	$89,614	75
Mining	2,100	2,890	73
Construction	2,095	2,166	97
Manufacturing	28,786	25,404	81
Printing and publishing	1,247	1,410	88
Food	2,213	2,667	83
Apparel	606	649	93
Fabricated iron	1,358	1,412	96
Electrical machinery	2,308	2,511	92
Petroleum	3,525	6,317	56
Transportation and public utilities	5,948	11,696	51
Wholesale	5,761	5,799	99
Retail	5,549	6,110	91
Finance	13,215	21,864	60
Services	2,707	2,945	92

[1] Source: Internal Revenue Service, "Statistics of Income—1972, Corporation Income Tax Returns" (Washington, D.C., Government Printing Office, 1977).

Unincorporated ordinary businesses and professional businesses are also subject to the District of Columbia business franchise tax. The general instructions to unincorporated business tax filers indicate that for tax purposes an unincorporated business is treated as an entity comparable to a corporation. There are, however, some additional considerations. Partnerships and proprietorships as business entities must be distinguished from the individual partners and proprietors. At the federal level, for example, there is no unincorporated business income tax, but there are provisions in the individual income tax forms for reporting such business income. The Small Business Corporation provisions in the federal law also provide for the taxation of some corporate income through the shareholders when specified qualifications are met. In these ways, unincorporated business income taxation is related to, and ideally would be coordinated with, corporate business taxation as well as individual income taxation. This leads to a variety of arrangements in the case of the District's unincorporated business income tax. One provision taxes professional corporations as if they were not corporate entities, and other arrangements recognize that some part of the incomes of the proprietorship and partnership business entities might, for business tax purposes, be treated as if it were the salary of a corporate employee.

In the case of the District of Columbia, the net income of the noncorporate entity is defined, then some fraction of it is apportioned to the District. An additional taxpayer(s) salary allowance is then provided to the extent of 70 percent of the District's net income of professional and service businesses and 30 per cent of the net income for other unincorporated businesses. This income would be taxed wherever and whenever the individual income taxes apply. The remainder of the business income is reduced by an exemption of $2,500 for professional and personal service businesses or $5,000 for other unincorporated businesses for each business entity in order to arrive at the District's table

income. In the course of these calculations, two references are made to the federal tax forms. Information on depreciation, gains and losses onsales of assets, as reported on federal forms is required, as well as any amendments or adjustments to returns suggested by the Internal Revenue Service must be reported to the District.

GENERAL PRACTICE AND CRITERIA

The business income tax base for incorporated and unincorporated business at the most general level is clear; i.e., net business income. Nevertheless, intricacies of definitions of taxable income arise at the operational level. If there are any principles for the construction of a definition, the first would be a simple one; i.e., that the definition should be one which is commonly used rather than one which serves only the tax purposes of a particular jurisdiction. A generally used definition of income facilitates compliance and reduces the costs of administration and enforcement. A definition of income which has relevance for several public authorities as well as stockholders and creditors is more nearly self-administering than a definition which is peculiar to a particular jurisdiction or purpose.

The use of the federal government's definitions of income by the states is a widespread practice. In each such case there are some adjustments, such as the one to take account of interest on some government securities which cannot be taxed and adding back the interest on other government securities which can be taxed. Other kinds of adjustments involve items such as disallowance of contributions to charities outside the taxing jurisdiction as well as accelerated depreciation, depletion, and investment credits. An examination of these exceptions suggests that the states frequently wish to avoid those features of the federal tax law which are designed to promote broad national policies but which simultaneously erode the state tax bases for the purposes which are beyond the states' responsibilities and capacities. The federal taxes are often used to promote investment. Furthermore, states apparently wish to avoid the irregular revenues, which follow from changes in federal policies, so they sometimes adopt new federal definitions and procedures as of a specified date. In all more than thirty states use federal definitions of income for their own tax purposes. The way in which states use the federal definitions vary considerably. For example: Colorado adds back to federal taxable income some items relating to net operating loss deductions and makes some capital gains adjustments; Delaware eliminates some federal deductions including dividends, interest and royalties allowed as foreign tax credit as well as certain percentage depletions; Georgia uses federal taxable income as of January 1, 1977; Connecticut starts with federal gross income and chooses its own deductions largely from the federal list: and both Maryland and Virginia use federal taxable income with adjustments. Each of the more than thirty states using one or another of the federal definitions of income for its own tax purposes also makes its own adjustments and adaptations of the federal concepts. Such provisions demonstrate that states do deliberate and evaluate the federal tax policies before accepting them.

Another variation in the procedure would begin by reference to the total book income as reported for federal tax purposes. Book income

is the result of the application of general accounting principles to the conditions and practices of a particular kind of business. It is the income businessmen and others generally discuss in annual reports, at stockholders' meetings, in conference with creditors and for public purposes generally. Since 1963 the Internal Revenue Service has been reporting book income for corporations. The Statistics of Income—1972, Corporation Income Tax Returns explains it as follows: "For the most part, tax law provisions agree with accepted accounting practices . . . However, for certain kinds of income the law allows or requires special accounting that digresses from generally accepted accounting methods.[2]

The digressions from generally accepted accounting practices have had the effect of making federal taxable income less than book income. In 1972 all corporate returns with book net income also reported tax net income.[3] For the years since 1963, tax income as a percentage of book income varied from 75 per cent to almost 90 per cent of book income. Except for interest earned from United States bonds, a state could then make a positive decision to incorporate other features of the federal tax law as they especially commended themselves to the states. By this arrangement a state would not automatically accept any of the federal provisions for deductions, exemptions and credits. The fluctuating relationship between federal tax income and book income with its implications for state revenue would be reduced if not eliminated. The administrative compliance and enforcement advantage of this alternative are at least as great and probably greater than those which go with the use of federal taxable income. Not only would the Internal Revenue Service have an interest in book value because of its relationship to the federal tax, but stockholders, bondholders, and regulatory authorities use book value to appraise a taxpayer's performance and credit worthiness.

The District of Columbia revenue effects of choosing federal taxable income, federal book income or the presently used District definitions could be studied most directly by thoroughly examining District returns. This approach is not possible at this time so estimates of three income tax bases for the District are made. The first is based on the District of Columbia's tax collections, the second on the estimated apportionment ratios and federal tax net income (before statutory deductions), and the third on the estimated apportionment ratios and federal book net income.

TABLE IV.—COMPARISONS OF 3-ESTIMATED BUSINESS TAX BASES FOR THE DISTRICT OF COLUMBIA BASED ON 1972 DATA AND 1976 DEFINITION OF THE DISTRICT'S TAX BASE[1]

	Tax base (thousands)	Percent of District of Columbia base
District of Columbia base	$364, 876	100
Federal income (net before special deductions)	380, 234	104
Federal book invome (net)	396, 105	109

[1] Sources: Internal Revenue Service, "Statistics of Income—1972, Corporation Income Tax Returns" (Washington, D.C.: Government Printing Office, 1977); District of Columbia Department of Finance and Revenue, Fiscal Planning and Research, "District of Columbia Tax Facts, Fiscal Year 1977."

[2] Internal Revenue Service, *Statistics of Income—1972, Corporation Income Tax Returns* (Washington, D.C.: Government Printing Office, 1977).

[3] *Ibid.*

The percentage differences in these tax bases are most important items in Table IV because they can be related to the most recent District experience in order to assess the current significance of the different tax bases. The major difference in the table (i.e., between the book value base and the District base) is attributable to the differing practice for assigning values of property, defining depreciation and depletion, timing of expenses and income, and expensing items (for tax returns) rather than capitalizing them.

A cross check on the estimated book income base was made by reference to tax expenditures as reported annually by the Senate and House Committees on the Budget.[4] The budget act of 1974 defines the concept as follows: ". . . special exclusions, exemptions, or deductions from gross income . . ." or any ". . . special credit, preferential rate of tax or deferral of tax liability . . ." are tax expenditures. There are, as usual, difficulties of implementation, but the items enumerated in the definition are especially important to the definition of a business tax base. Generally these items would be much more significant for manufacturing and extractive industries than for commercial and professional businesses. The revenues related to these items are "spent" before they are collected in the pursuit of national goals such as pollution control, energy development and the general stimulation of the economy. An estimate based on this data and approach shows that the District could increase its business tax revenues by an estimated four to five per cent if it did not allow these special exclusions, exemptions and deferrals.

III. Current Apportionment Practices in The District of Columbia

The apportionment procedures used by the District of Columbia follow a familiar pattern. An equally weighted three factor formula including property, payroll and sales is used. Sales are located by reference to the destination of products or services with special provision for reclaiming sales to the District if they originated in the District and were destined for a jurisdiction which did not claim them for taxing purposes. For professional and service businesses, a single factor formula based on "revenue hours" is used to apportion their income. Businesses which have places of business, other properties or regular activities in the District may apportion their income without regard for the kind of nexus they might have with other jurisdictions.

The implications of these definitions and procedures are substantial, influencing the revenue productivity of the tax as well as the equity and efficiency of the tax.

General apportionment practices and the apportionment formulas and processes can be separately analyzed for several major business categories. The analysis for each category follows a similar pattern which begins with an estimate of the apportionment factors which are most frequently used by the District of Columbia and other states. Following this is a second step which combines the factors into various formulas at which point it is possible to assess the direct revenue impact of various formulas relative to one another. The factor ratios

[4] Congressional Budget Office, U.S. Congress, *Budget Options for Fiscal Year 1977: A* report to the Senate and House Committees on the Budget.

presented in Tables V through IX are aggregate ratios indicating the fraction that the District of Columbia property, payroll and sales are of total property, payroll and sales for each industry category. Sales origin are sales of goods or services which are located or counted for apportionment purposes at the place (within the jurisdiction) from which they are "sent" to their purchaser. In contrast, the place (jurisdiction) of the purchaser who receives the goods or service is the destination of the sale and is called sales-destination if it is counted for apportionment purposes at the purchaser's end of the exchange. Many sales are assigned to the same jurisdiction whether they are counted at their origin or destination. However, most jurisdictions are net importers of many things and usually net exporters of their production specialties. On the basis of this pattern of exchange it is often noted that an emphasis on sales-destination favors a jurisdiction's export industries relative to its import industries. The Council of Chambers of Commerce in their State Tax Report for December, 1976 quoted excerpts from a New Jersey study which made an additional point about the weighting of the sales destination factor, "As with many tax reforms, most of the benefits accrue to states who are first to initiate the reforms. This is no exception." The study then notes that New York has already revised her apportionment formula and furthermore "New Jersey cannot afford the luxury to study or wait and see when there is evidence that other states are contemplating similar moves."

Individual taxpayers could have ratios which vary from zero to one hundred per cent. Since the manufacturing sector of the District of Columbia as well as the District itself is relatively small, the ratios for most taxpayers will be very small. Nevertheless the choice of the apportionment formula has a substantial impact on the income tax base assigned to the District and the selection of a sale factor is especially important. Table V presents the estimated ratios which are used to apportion manufacturers' business income.

The two industries included in Table V are the two largest industries in the District and account for more than 85 percent of manufacturing payrolls. However, the District's sales by destination for one of these and all other two digit industries are significantly greater than the origin oriented ratios, indicating that use and consumption of goods and services is much less geographically specialized than is production—a finding which is not surprising. Table V–A presents estimates of the several apportionment ratios for all other two-digit SIC industries.

TABLE V.—FOR MANUFACTURING AND SELECTED 2-DIGIT INDUSTRIES FOR THE DISTRICT OF COLUMBIA BASED ON ESTABLISHMENT DATA FROM THE CENSUS OF MANUFACTURERS, 1972 [1]

	Payroll	Property	Sales origin	Sales destination
All manufacturing	0.0012	0.0008	0.0008	0.0025
Sic 20: Food	.0012	.0012	.0008	.0028
Sic 27: Printing and publishing	.0179	.0127	.0166	.0039

[1] See app. A.

TABLE V-A.—APPORTIONMENT FACTOR RATIOS FOR ALL 2-DIGIT INDUSTRIES FOR THE DISTRICT OF COLUMBIA BASED ON ESTABLISHMENT DATA FROM THE CENSUS OF MANUFACTURERS, 1972 [1]

		Payroll	Property	Sales origin	Sales destination
20	Food	0.0012	0.0008	0.0008	0.0028
21	Tobacco				.0028
22	Textiles				.0005
23	Apparel	.0002	.0001	.0002	.0005
24	Lumber				.0012
25	Furniture				.0049
26	Paper				.0039
27	Printing, publishing	.0179	.0127	.0166	.0039
28	Chemicals				.0002
29	Petroleum				.0014
30	Rubber, plastics				.0002
31	Leather				.0002
32	Stone		.0001		.0004
33	Iron				.0004
34	Fabricated iron	.0004	0+	.0002	.0004
35	Machinery				.0037
36	Electrical machinery	.0002	.0001	.0001	.0060
37	Transportation eq				.0011
38	Instruments				.0033
39	Miscellaneous	.0007	.0003	.0004	.0030

[1] See app. A.

Three general conclusions can be drawn:

1. The origin oriented factors are generally smaller than the destination factor.
2. Industries would share tax liabilities very differently depending upon the construction of formulas.
3. The presence of property and payroll for a number of industries is so modest that the sales destined into the District for these industries are not only much diluted, but when combined with little or no property and employment, these sales could go undetected except for a vigilant tax collection and enforcement effort.

On average for all of the District, it is estimated that manufacturers' sales destined to the District are about three times greater than similar sales originating in the District. Thus, if sales at origin were substituted for sales by destination in the usual three factor property-payroll-sales formula, the District tax base would be reduced by 38 percent. (From Table V:

$$\frac{.0012+.0008}{3}=.0009+ \text{ whereas}$$

$$\frac{.0012+.0008+.0025}{3}=.0015 \text{ and } \frac{.0015-.0009+}{.0009+}=.38)$$

Or, if sales by destination were given a weight of 50 percent in a three factor formula (e.g., property one-fourth, payroll one-fourth and sales destination one-half)—a practice with Wisconsin, New York and Florida and a likelihood for New Jersey—the District's tax base would increase by about 88 percent. (From Table V:

$$\frac{.0012+.0008+2\times.0025}{4}=.0017+ \text{ and } \frac{.0017-.0009}{.0009}=.88)$$

The printing and publishing industry contrasts with this pattern. In this instance, sales at origin are about four times greater than sales by destination.

If sales at origin were substituted for sales by destination, that industry's District of Columbia tax base would increase about 36 percent as calculated above. If sales by destination were doubly weighted, this industry's tax base would decrease about 17 percent based on calculations already illustrated. In this way the design of apportionment formulas does change the amount of total taxable income and the way in which the tax liability is shared among the several industries.

Wholesaling and retailing within the District of Columbia combine to produce a larger business income tax base than does the manufacturing sector because the apportionment factors are larger than was the case for manufacturing. Table VI presents the apportionment ratios for wholesale and retail businesses.

TABLE VI.—APPORTIONMENT FACTOR RATIOS FOR WHOLESALE, RETAIL, AND SELECTED SUBCATEGORIES OF THESE INDUSTRIES FOR THE DISTRICT OF COLUMBIA BASED ON ESTABLISHMENT DATA FROM THE CENSUS OF BUSINESS, 1972[1]

	Payroll	Property	Sales origin	Sales destination
Motor vehicles	0.0020	0.0012	0.0012	0.0012
Machines and equipment	.0050	.0039	.0039	.0039
Electrical goods	.0049	.0059	.0059	.0057
Groceries	.0041	.0029	.0029	.0029
Gasoline, etc	.0017	.0014	.0014	.001
Total, wholesale	.0037	.0021	.0025	.0025
Food stores	.0035	.0029	.0029	.0029
Eating and drinking	.0090	.0074	.0074	.0074
Autos and gasoline	.0029	.0022	.0022	.0022
Apparel	.0071	.0061	.0061	.0061
General merchandise	.0011	.0035	.0035	.0035
Total, retail	.0053	.0039	.0039	.0039

[1]See app. A

In these cases the substitution of one sales factor for the other would have no effect on revenue. However, if the sales factor was doubly weighted, wholesalers' tax base would decrease 5 per cent and retailers' tax base would decrease 3 per cent. The reason for this reversal in the revenue effects of apportionment formulas for retailers and wholesalers is the relatively large property and payroll factors. This general result would prevail for the major subcategories presented in Table VI except for wholesalers of electrical goods and retailers of general merchandise.

Services account for a most substantial part of economic activity in the District of Columbia. The proportion of all services which are District services are indicated by the proportions presented in Table VII. The four ratios are the ones which are frequently used for the apportionment of the income of service industries. However, for industries which use a lot of labor relative to property, the location or possibly the relocation of very modest amounts of property would reapportion as much as one-third of the taxable income. In such cases, putting additional emphasis on the labor services or human capital is consistent with the production processes and revenue productivity. Furthermore, using several apportionment factors for the location of the income of service industries is redundant. Services, by their very nature, are produced and consumed in the same place and often at the same time. The situation is in sharp contrast with the commodity pro-

ducing activities for which the place as well as the time of production often differs substantially from the time and place of consumption.

TABLE VII.—APPORTIONMENT FACTOR RATIOS FOR SERVICE INDUSTRIES AND SELECTED SUBCATEGORIES FOR THE DISTRICT OF COLUMBIA BASED ON ESTABLISHMENT DATA FROM THE CENSUS OF SELECTED SERVICES, 1972 [1]

	Payroll	Property	Sales origin	Sales destination
Business service	0.0141	0.0141	0.0112	0.1012
Legal service	.0200	.1200	.0177	.0177
Medical service	.0170	.0115	.0150	.0150
Hotels and motels	.0159	.0159	.0116	.0116
Personal	.0080	.0080	.0068	.0068
Total, services	.0122	.0122	.0108	.0108

[1] The ratios for medical services are based on Internal Revenue Service data. See app. A.

The three largest categories of services which are separately listed account for almost 70 per cent of the receipts of all services in the District of Columbia. This is of special importance because of their magnitude and because their income is often subject to the unincorporated business tax for which there are some special arrangements.

TABLE VIII.—RELATIVE IMPORTANCE OF SELECTED SERVICES TO TOTAL SERVICES IN THE DISTRICT BASED ON RECEIPTS AS REPORTED IN THE CENSUS OF SELECTED SERVICES FOR 1972 AND BUSINESS TAX RETURNS, 1972–73

	Receipts (thousands)	Relative size of selected services
All services	1,471,701	100
Business service	423,427	29
Legal service	307,908	21
Medical service	253,087	17
Hotels and motels	123,200	8
Personal	95,381	7

Substituting sales origin for sales destination would not change the District of Columbia's revenue, but doubly weighting sale would reduce the District of Columbia income by about 2 per cent for service industries.

Contract construction has income to apportion to the District according to the factors in Table IX. As is the case with services-payroll, property and sales for construction would tend to be similarly located. Here, too, the choice of a sales factor has little revenue impact, but doubly weighting sales would increase the revenue from this industry by about 2 per cent.

TABLE IX.—APPORTIONMENT FACTOR RATIOS FOR CONSTRUCTION FOR THE DISTRICT OF COLUMBIA BASED ON ESTABLISHMENT DATA FROM THE CENSUS OF CONSTRUCTION, 1972

	Payroll	Property	Sales origin	Sales destination
Contract construction	0.0056	0.0056	0.0061	0.0061

Apportionment data for transportation and public utilities establishments is not available from the Census publications. Although alternative apportionment factors can not be presented on the basis of where personal income is earned as well as by reference to employ-

ment, this industry has .007 of its activities in the District of Columbia.[5]

The application of formulas based on these factor ratios shows how each business group contributes tax base to the District of Columbia. Three formulas are constructed for Table X and the amounts of income they apportion to the District is presented in Table XI.

TABLE X.—APPORTIONMENT FORMULA RATIOS FOR THE DISTRICT OF COLUMBIA DERIVED FROM THE FACTOR RATIOS IN TABLES III TO IX

	3 factor		
	Property-payroll-sales		Property ¼, payroll ¼, sales destination ½
	Destination [1]	Origin	
Manufacturing	0.0015	0.0009	0.0018
Wholesale	.0030	.0030	.0029
Retail	.0044	.0044	.0042
Services	.0117	.0117	.0115
Construction	.0058	.0058	.0059
Transportation and public utilities	.0070	.0070	.0070

[1] This reflects current practice in the District of Columbia.

The variations in the apportionment formulas as they are presented in Table X show that they can change the total revenue from all industry categories by as much as 3 per cent. However, not all groups move in the same direction with a change in formula. Manufacturing and construction experience larger tax liabilities with more emphasis on sales destination. It should be noted, however, that the largest two-digit SIC industry in the District of Columbia (i.e., printing and publishing) experience decreased District of Columbia tax liabilities with greater emphasis on the destination of sales as an apportionment factor. For other industry groups, greater emphasis on sales destination reduces or does not change business tax liabilities.

TABLE XI.—DISTRICT OF COLUMBIA TAX BASE BY INDUSTRY GROUPS AND PERCENTAGES OF THE DISTRICT OF COLUMBIA TAX BASE—BY INDUSTRY GROUPS FOR EACH OF 3 APPORTIONMENT FORMULAS, 1972 [1]

[Dollar amounts in thousands]

	3 factor					
	Property-payroll-sales				Property ¼, payroll ¼, sales destination ½	
	Destination		Origin			
	Amount	Percent	Amount	Percent	Amount	Percent
Manufacturing	$73,771	20	$44,260	13	$88,519	23
Wholesale	28,591	8	28,591	8	27,638	7
Retail	52,969	14	52,969	16	50,556	13
Services	117,000	32	117,000	34	116,000	31
Construction	30,275	8	30,275	9	30,722	8
Transportation and public utilities	66,553	18	66,533	20	66,544	18
Total base	369,159	100	339,648	100	379,979	100
Revenue (6 percent): [2]						
(a)	22,150		20,379		22,799	
(b)	22,814		20,990		23,483	

[1] Apportionment formulas in table X are applied to Federal net income before statutory deductions.

[2] The 2d revenue figure includes a 3 percent upward adjustment to reflect the District's practice of including State and local income taxes in their base. 6 percent was the 1972 tax rate and is used here so that the estimated bases and revenues can be compared with the actual 1972 data.

[5] See Appendix A.

CORPORATE AND UNINCORPORATED BUSINESS INCOME

The apportionment ratios presented above are used to apportion the incomes of corporations and unincorporated businesses. It is, nevertheless, necessary to separate the District's tax base into the two major parts because a fraction of the incomes of unincorporated businesses are not subject to the tax. Thirty percent of the income of personal service businesses is taxed and 70 percent of other unincorporated business income is taxed. The relative importance of corporate and unincorporated business is summarized in Table XII for several broad industry categories.

TABLE XII.—PERCENTAGES OF BUSINESS INCOME WHICH IS EARNED BY UNINCORPORATED BUSINESSES BASED ON STATISTICS OF INCOME, 1972

[In percent]

Manufacturing	Wholesale	Retail	Services	Transportation	Construction
3	29	52	91	13	29

The tax base and revenue estimates in Table XI take account of the relative importance of the unincorporated business. This is done by reducing the income of unincorporated businesses by the appropriate percentage (30 per cent or 70 per cent) before it is combined with the corporate income to generate the total District of Columbia business tax base. The results of this calculation suggest that about 40 per cent of the total tax base is attributable to unincorporated businesses. This ratio is somewhat larger than the District's tax data indicates, but it should be notified that the early experience of tax revisions is rather difficult to interpret. There have been recent changes in the tax rate and the income of professional entities has been added to the tax base. It is likely that after an introductory period while compliance and administration is developed, the unincorporated business tax will be more productive. Whether the actual unincorporated business tax base for the District is 40 per cent, or more nearly 30 per cent of the entire base, it is still clear that the structure of the economy in the District is such that the unincorporated business tax base is far more important for the District than it is for the entire United States.

IV. Conclusions and Recommendations

TAXABILITY

It is proposed that all businesses (corporate and unincorporate) which engage in any trade, business, commercial, service or professional activity within the District of Columbia be required to file a franchise income tax return, except those partnerships with less than $10,000 gross income and sole proprietorships with less than $5,000 gross proprietorship income. This provision would relieve about one-third of the partnerships and about forty per cent of the proprietorships of the obligation to file a return. These cut-off points are set by reference to the $5,000 salary allowance to be suggested for proprietors and partners. It assures the smaller less profitable businesses that they need not file a return only to have any possible net income offset by a

reasonable salary allowance. These requirements would replace the present $12,000 gross income cut-off for filing tax returns. This recently enacted allowance would not treat taxpayers equally. For example, a taxpayer with $12,000 gross income and $1,000 net income would pay no income tax, whereas a taxpayer with $12,001 gross income and $1,000 net income would pay $99.00 (9.9% x $1,000) in business income taxes. Thus taxpayers in essentially similar economic circumstances are treated very differently.

The filing businesses may or may not be allowed to apportion their income. Apportioning businesses are those which have a regularly used place of business outside the District or an income tax liability actually paid to another jurisdiction. Partnerships and proprietorships may apportion if any partner or proprietor incurs a personal income tax liability to another state. It should be noted that businesses which apportion could, with the apportionment formula to be recommended, pay District taxes on all of their income. Nevertheless, income apportioned to a state which has no income tax and in which the apportioning taxpayer has a regularly used place of business would not be required to include such income in the District base. Non-apportioning businesses will pay District income taxes on their entire incomes minus the salary allowance.

These provisions are designed to assure the District of Columbia that taxpayers, who clearly have nexus with the District and have no substantial contact or income tax responsibilities to another jurisdiction, will carry a fair share of state-local tax responsibilities. This is especially important when many jurisdictions use apportionment factors which are relatively difficult to administer and audit. The 1964 Willis study found sales destination to be such a factor.[6] The "revenue hours" factor which the District currently requires for unincorporated businesses which qualify for a salary deduction of 70 per cent of net income probably would be difficult to administer and could encourage tax minimization by apportioning tax base away from jurisdictions with well established authority to tax such income.

For the purposes of determining eligibility to apportion and defining the taxable entity, the unitary business concept is proposed. This implies that the combined reports for all affiliates will be used for tax purposes. The unitary concept is based on the existence of a common management and control. All of the resources subject to the direct or indirect control by a single management are at that management's disposal for the purpose of realizing income. Overlooking the time necessary to adjust (i.e., to acquire or dispose of assets) and ignoring legal requirements such as divestiture, the assets under a single management reflect the current business judgment of what constitutes an economic entity. The taxing jurisdictions can readily accept this judgment for tax purposes on the bases of convenience and the logic of business.

The revenue effect of these proposals would be positive but probably modest. This is so partly because the District of Columbia now counts as District sales, those sales which originate in the District and are destined to places where the seller is not taxed on corporate income.

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[6] U.S. Congress, House, *Report of the Special Subcommittee on State Taxation of Interstate Commerce of the Committee on the Judiciary* (Washington, D.C.: Government Printing Office, 1964).

This practice hedges to a degree against "nowhere" apportionment but cannot apply where the sales factor is not used. It does not establish as firm a test as the place of business or actual payment of taxes test proposed for determining which taxpayers are eligible to apportion. On the other hand, the proposed arrangement does allow a taxpayer, with sales (and therefore income) assigned to a state with no tax, to exclude such sales from District sales. The proposed arrangement has the additional advantage of reminding taxpayers that the payment of state taxes to the several states with which they may have contact will be recognized by the District as proof of the taxpayers eligibility to apportion. Although the revenue effect is uncertain, it would be positive.

The application of the unitary business concept would also have a positive influence on revenue because presently the District of Columbia cannot require consolidated reporting even though taxpayers may request the use of such reports. Thus the taxpayer may request consolidated reporting, but the District can deny the request. On balance such an arrangement would lead to requests which would reduce or maintain, but seldom increase District revenue. Taxpayers not requesting the option would on balance increase or maintain, but seldom reduce District revenue if they were required to file consolidated returns. In this way affiliate reporting, separate accounting or any other arrangement that subdivides unitary businesses for tax purposes has a negative impact on District revenue. Removing this possibility by requiring consolidated reports and/or allowing consolidated reports to be required could only increase revenue.

APPORTIONMENT FORMULAS

The District of Columbia has an apportionment formula which fits well with its own economy, is consistent with the apportionment practices of many other states and the Multi-state Tax Commission, and is the formula most often preferred by taxpayers.

It is only when the current trend in the states generally is reviewed that need for a change is apparent. The recent developments in Wisconsin, New York and Florida as well as reported discussions in New Jersey indicate that the trend toward a destination emphasis in apportionment has taken on new dimensions. The new emphasis takes the form of doubly weighing the sales destination factor so that the familiar equally weighted three factor formula combining property, payroll and sales destination with equal weights of one-third on each factor is replaced by a formula which weights property at one-fourth, payroll at one-fourth, and sales destination at one-half. This modification of the weights is proposed.

The revised formula is proposed as the best alternative for the District of Columbia. It is perhaps ironic that, in a situation in which each state devises its own apportionment formula, each state must in its turn adapt its own practices to the general trends set by others. The current trend in the Northeast, the Midwest and the South is still toward destination.

No change is recommended in the apportionment of the income of professional and personal unincorporated service businesses. This practice recognizes the relative unimportance of property in the pro-

duction of these services. If then, property were a factor in apportionment, very substantial amounts of income would be apportioned according to the location of very small amounts of property. Thus, the location of "revenue hours" approximates location of receipts. The use of a regular payroll factor would concentrate apportioned income closer to the offices and centers of activity.

The revenue effects of the proposed formula would be about 3 percent of the District's business tax revenue or 1.5 million dollars for 1977.

APPORTIONABLE AND TAXABLE INCOME

The corporate and unincorporated business tax forms used by the District of Columbia require the use of several federal definitions and procedures for determining taxable income, but the basic definitions of income are not used. Many states use a federal income concept as a starting point and then make a series of adjustments to suit the tax base to the states' purposes. The District could follow this procedure, and it is specifically proposed that they key into the book income concept as reported in Schedule M of the federal income tax forms. The District has a similar requirement. After adding back income taxes paid, the resultant income would be based on a customary concept as used to report to stockholders and creditors and is "income" as accountants and the general public understands it.

The major reason for using a federal definition of income is to facilitate compliance and administration. The special reasons for proposing the use of book income with adjustments are two:

1. The use of book income allows the District to consciously appraise changes in federal tax procedures before accepting them. This could avoid fluctuations in District revenues which derive from the narrowing and widening of the difference between book income and tax income noted earlier. This reason is more compelling in view of the federal government's policy of using tax expenditures to implement national policies, such as full employment and promotion of investments of particular kinds. To the extent that a sub-national jurisdiction may be unable or unwilling to spare its tax base for such national purposes, they will want to preserve the option to participate or not to participate in the federal tax expenditures policy.

2. The second reason for using adjusted book value instead of taxable income is due to the courts questioning of some kinds of adjustments states have wanted to make a redesign the federal concepts to suit state purposes. One possible way to meet this situation would be to begin with a broad definition of income and to make the desired general adjustments.[7]

Book income is not the only federal income concept which could be used as a starting point for the determination of a District of Columbia tax base. It is the one which gives the most scope for District policy implementation and would distribute District tax liabilities among industries differently than they would be distributed if federal tax return net income were used. This is so because different industries

[7] *Boston Stock Exchange et al* v. *Tax Commission, New York State et al* concluded last month that a reduced stock transfer tax on sales made in New York by non-residents was unconstitutional.

benefit differently from the special provisions of the federal tax law. Table XIII shows that construction, wholesale, retail and service industries would have a relatively smaller share of the book income tax base, whereas some manufacturing, transportation and finance would have a relatively smaller share of the book income tax base, whereas some manufacturing, transportation and finance would have a relatively larger share of the book income tax base than of the federal tax return income.

Other points at which to key into the federal income tax returns in order to establish a District of Columbia tax base would include federal gross business receipts with all deductions chosen by the District, federal net income which implicitly accepts all regular federal deductions, net federal taxable income which accepts regular deductions and special statutory deductions. Or, a percentage of federal income tax paid which accepts statutory federal deductions and possibly various tax credits could become the District tax levy. Any one of these possibilities would facilitate compliance and administration of a District business tax. However, the latter possibilities would present a narrower tax base for the District and would reduce the scope of District policy implementation.

TABLE XIII.—RELATIVE SHARES OF SELECTED INDUSTRY GROUPS IN A FEDERAL NET INCOME TAX BASE AND A BOOK NET INCOME TAX BASE DERIVED FROM DATA FROM THE STATISTICS OF INCOME FOR 1972 CORPORATION INCOME TAX RETURNS

[In percent]

	Industry shares of net income	
	Tax return	Book
All industries	100	100
Mining	3	3
Construction	3	2
Manufacturing	43	40
Printing and publishing	2	2
Food	3	3
Apparel	1	1
Fabricated iron	2	2
Electrical machinery	3	3
Petroleum	5	7
Transportation and public utilities	9	13
Wholesale	9	6
Retail	9	7
Finance	20	24
Services	4	3

The proposal about unincorporated business income taxes that is implicit in the foregoing statement is that they should continue to be taxed as business entities. There are two strong points in favor of retaining the unincorporated business tax. The unincorporated business income tax raises more than thirty percent of the total business tax revenue. Although this revenue could in most ordinary situations be raised with a personal income tax on non-residents, such an alternative has not been available to the District. Secondly, the providers of labor services or human capital and the suppliers of property or physical capital will, if they have a choice, choose to organize and employ these productive resources within legal forms of enterprise which minimize costs including tax costs. Here, too, the special circumstances of the District play a role. The presence of an extraordinary combination of

proprietorships, partnerships, professional corporations, small business corporations as well as some large and small regular business corporations means that rather fine lines are necessarily drawn between large segments of the business population. Differential tax pressures among the sectors would influence the decisions taken by businesses when choosing among the several available legal forms.

In the ordinary course of record keeping unincorporated businesses do not always make explicit allowances for reasonable salaries. For the sake of tax equity between District corporations and unincorporated businesses such an allowance is necessary. A reasonable allowance for salaries cannot be precisely determined; but with principle reference to current behavior of partnerships, it is proposed that 50 percent of apportionable income, or 5,000 dollars per partner or proprietor, whichever is larger, be the allowance for salaries and be deducted from income for tax purposes.

Present practice of partnerships generally shows that 50 percent of net profit is much larger than the percentage of net profit paid out to partners. Table XIV shows that partners in the several industry categories receive payments not contingent on profits of as much as one-fourth of the partnership's net income. The range in the ratios of these payments to net profits reflects variations in methods of compensation as well as the profit conditions of the businesses and professions; nevertheless the actual payments vary from about one-half to one-eighth of the suggested 50 percent allowance. The supporting data is summarized in Table XIV.

TABLE XIV.—RATIO OF PAYMENTS TO PARTNERS TO NET PROFIT FOR PARTNERSHIPS IN SELECTED INDUSTRY GROUPS, STATISTICS OF INCOME BUSINESS TAX RETURNS FOR 1973 [1]

	Payments to partners net profit (percent
All industries	12
General contracting	19
Special contracting	21
Manufacturing (total)	16
Printing and publishing	23
Transportation and public utilities	20
Wholesale	15
Retail	21
Services (total)	11
Business services	18
Medical services	6
Legal services	6
Personal services	24

[1] Payments to partners are those not contingent on profits.

The changes to a uniform $5,000 minimum salary allowance would have the effect of reducing business tax liabilities for the smaller less profitable unincorporated businesses which generally operate entirely within the District. The 5,000 dollar per proprietor and partner allowance for their firms would reduce to zero District taxable income for about 40 percent of the filing partnerships. The 5,000 dollar salary allowance for each proprietor and partner replaces the present 5,000 dollar allowance for each unincorporated business and the 2,500 dollar salary allowance for unincorporated professional and person services

businesses. Because a 5,000 dollar allowance replaces a 2,500 dollar allowance in some cases and the proposed 5,000 dollars are allowed for each partner, the less profitable partnerships will gain a larger allowance than the present arrangements provide. The loss of revenue due to this increased allowance would be made up from partnerships with more than 5,000 dollars of net income per partner because the 5,000 dollar allowance and the percentage of income allowance is not cumulative, but alternative. Additionally, since the 5,000 dollar allowance is to be taken from the apportionable business income rather than from apportioned income, apportioning partnerships will have their District of Columbia income reduced by this allowance only to the extent that their income is apportioned to the District.

About 40 percent of the District's proprietorships (i.e., those which are professional or personal service businesses) will have their basic salary allowance increased from 2,500 dollars to 5,000 dollars. The basic salary allowance for business proprietorships will not be changed. The loss of revenue due to the proposed change will be recouped from the more profitable proprietorships and the apportioning proprietorships, because, here too, in contrast with present procedures, the increased allowances are not cumulative with the percentage allowances and the basic allowance is deducted from apportionable income rather than from apportioned income.

The revenue gains and losses in this proposal would tend to cancel each other, but the gain is greater than the loss by approximately 14.5 millions of dollars in tax base for 1977. This estimate is based on an estimated 15,000 unincorporated business tax filers for 1977. Gains and losses in allowances and their revenue implications were separately estimated for partnerships and proprietorships which provide personal and professional services. Likewise, separate estimates were made for partnerships and proprietorships in the other lines of production. For example, it was estimated that 320 small partnerships which now have a 2,500 dollar salary allowance per partnership would have that allowance replaced with an allowance equal to 5,000 dollars times the number of partners in the firm. For a two-partner firm the proposed basic salary allowance would be 10,000 dollars instead of 2,500 dollars for a net reduction in tax base of 7,500 dollars. For a small two-partner business, the proposed basic salary allowance would be 10,000 dollars instead of 5,000 dollars, because such businesses currently are permitted a salary allowance of 5,000 dollars per business.

The reduction in the tax base in this case would be 5,000 dollars. A tax base (revenue) gain would occur, for example, with a four-partner professional firm which had a 60,000 dollar net income earned entirely wthin the District. The present arrangement would permit the partnership a 2,500 dollar basic salary allowance plus a 70 per cent of net income allowance (i.e., $.7 \times 60{,}000 = 42{,}000$) for a total of 44,500 dollars. Under the proposed arrangement, this same firm would have a 30,000 dollar allowance that is the larger of 4 (partners) $\times$ \$5,000; i.e., \$20,000 or 50% of net income; i.e., \$30,000. The tax base is increased by 14,500 dollars and the salary allowance is reduced to 30,000 dollars. Combining all such calculations for all taxpayers produced an estimated revenue increase of 1,454,000 dollars for 1977.

The basic 5,000 dollar salary allowance is proposed as a deduction from the income of the business or professional enterprise. Thus, it is proposed that the allowance be taken from the total income of the entire enterprise; i.e., from the apportionable income rather that apportioned income. This change would have a slight positive effect on revenue, but an estimate cannot be made from available data; although it is possible that an analysis of District tax returns for recent years could produce a viable estimate.

The 50 per cent of income allowance replaces the 70 per cent of income salary allowance for unincorporated professional and personal service businesses and the 30 per cent of income salary allowance for others. The revenue consequences are modest with the decreased allowance for professional and service businesses—a little more that offsetting the increased allowances for other businesses.

About 8 to 10 thousand business taxpayers, partnerships and proprietorships would have their salary allowance raised from 30 per cent to 50 per cent of net income and approximately 4 to 5 thousand professional and personal businesses would have their salary allowance reduced from 70 per cent to 50 per cent of net income by these proposals. The gains and losses inherent in this proposal will tend to cancel each other. The net income from the professional and personal service businesses generates about 60 percent of the profit of unincorporated business taxpayers in the District. Thus, there is a modest revenue gain in this proposal. Using the District's estimate of 15 to 16 million dollars of unincorporated business income tax revenue for 1977 as a starting point for calculations, the revenue gain would be 20 per cent of 60 per cent of 15,500,000 dollars, or 1,860,000 dollars. The revenue loss would be 20 per cent of 40 per cent of 15,500,000 dollars, or 1,240,000 dollars. The net gain in revenue is 620,000 dollars.

The revenue effects of all of these proposals are summarized in Table XV. The redefinition of income could increase revenues by about 5 per cent of the District's estimate of 1977 business tax revenues, or 2.5 million dollars, depending upon which adjustments the District explicitly chooses to make. The changes in the salary allowances and related apportionment procedures would also increase the revenue to the District by a little more than 4 per cent of the 1977 business tax revenues, or about 2 million dollars of additional revenue. This is attributable to the change in the percentage of income allowance and the elimination of the separate 2,500 and 5,000 dollar additional allowances which now are deducted from apportioned income.

TABLE XV.—SUMMARY OF RECOMMENDED CHANGES

Recommended change	Current practice	Estimated revenue effect and comments
1. Filing—All businesses in any trade or business except partnerships with gross annual income of $10,000 or less, proprietorships $5,000 or less.	Businesses with less than gross income need not file.	(+).
2. Require or all District to require consolidate reports.	District cannot require/can deny or grant requests for consolidated reporting when initiated by taxpayer.	(+) The present arrangement which allows taxpayers to request consolidated reports and the District to deny them tends to decrease revenues depending upon the number of requests and how many are denied.
3. Apportioning corporations—required to pay income taxes or have place of business in another State.	". . . activities and manner of doing business outside the District are sufficiently extensive and of such a nature as to warrant . . ." being noted as doing business.	(+).
4. Double weight sales destination factor in 3-factor formula.	Equally weighted 3-factor formula including sales destination.	(+$1,500,000.)
5. Maintain "revenue hours" apportionment for businesses permitted the 70 percent of income salary allowance.	----------	A regular payroll factor also be employed with the effect of centralizing income around the offices and operating locations.
6. Adopt book net income in conformance with that concept as reported for Federal tax purposes.	Approaches Federal net income before statutory deductions.	(+$2,500,000.) Other options for achieving conformity are available with revenue consequences depending largely on the treatment accorded special Federal provisions such as depreciation, depletion, expensing, investment credits, exclusions, other jurisdiction income taxes, capital gains and carryover-carrybacks. The options chosen by the District for corporations would also be used for unincorporated business.
7. Maintain unincorporated business income tax.	----------	The taxation of nonresident personal income including the entire net income of partnership and proprietorship as attributed to owners of the business would reduce the revenue argument for the unincorporated business tax.
8. For unincorporated business tax—permit of 50 percent of income salary allowance or $5,000 per proprietor or partner deducted from the businesses' apportionable income.	30 percent of income for regular businesses; 70 percent of income for personal and professional businesses;	(+$600,000.)
	plus $5,000 for each regular business or $2,500 for each personal professional business.	(+$1,500,000.) There is an additional positive revenue impact due to the deduction of the basic 5,000 salary allowance from approtionable rather than approtioned income.
9. Explore the services available through the Multi-State Tax Commission for possible use by the District.	----------	Probably (+).

The combined effect of all of these changes would be about 13 per cent; i.e., 6.5 to 7 millions of dollars of additional revenue for the District of Columbia in 1977.

The estimate of 6.5 to 7.0 millions of additional revenue gives a very modest recognition (.50–.75M) to the four positive revenue items which are definitely positive in their revenue impact but which cannot be estimated without a thorough analysis of District returns. The additional revenues are generally derived from businesses and taxpayers who by the nature of their businesses and patterns of living benefit greatly from the business opportunities and public services provided by the District. The larger and more profitable corporate and unincorporated businesses which share these benefits would be assessed somewhat larger tax liabilities. The businesses with their operations

most substantially localized within the District which are the smaller to middle size businesses will not avoid District taxes, but in the vast majority, they will be somewhat relieved by the combined effects of the adoption of the larger basic salary allowance—the 50 per cent of income allowance for regular unincorporated businesses and the book income base which very closely approximate the currently used base for the smaller businesses. The abilities of the taxpayers and the special circumstances and revenue needs of the District are addressed.

COLLECTIONS AND AUDITS

It is inevitable that every tax will produce somewhat less revenue than its theoretical potential indicates. This is generally more important for jurisdictions with small staffs, who must monitor numerous taxpayers whose principal contact with the jurisdiction is through sales of goods and services in combination with little property and payroll. The Multi-state Tax Commission and especially its joint audit program is designed to provide services to jurisdictions in these and other situations. Depending upon the size the District's staff and the support for thorough audits of the taxpayers who are located essentially without the District, a membership with the Multi-state Tax Commission could be very helpful. More than thirty states are members or associate members which means that the audit of a firm for any one state can simultaneously provide the same services to many members. It is the potential efficiency of the arrangement which makes possible a more thorough simultaneous review for all states of all of the records of multi-jurisdictional taxpayers than some states are able to provide through their own offices. Regular and careful examination of tax reports can demonstrate the ways and means by which reasonably established tax liabilities can be determined and met with a minimum of compliance and administrative effort. It is suggested that the services available through the Multi-state Tax Commission be fully explored for their usefulness to the District.

V. APPENDIX A

Estimation of Apportionment Factors

Apportionment factors and ratios are based on establishment (operating unit of a company) data from the Census of Manufactures, Wholesale, Retail, Contract Construction, and Selected Services for 1972 in all cases, except for those specifically noted cases.

An apportionment ratio for an industry is the property, the payroll or sales of that part of the industry which is within the District of Columbia divided by all property, payroll or sales within and without the District. The apportionment ratios are based on 1972 data, the most recent data available; but the ratios are very stable from year to year. Thus, the relative size of the several ratios determines the revenue consequences of choosing different factors for apportionment regardless of the absolute size of the tax base under consideration.

For manufactures, the value of shipments from a location generates the sales (origin) factor, payroll is reported by states, and the value of services from property (value added minus the values of all human services) generates the property ratios. The sales (destination) of manufactures is distributed according to the sales (origin) of wholesalers (including manufacturers' sales outlets, offices and representatives).

Wholesale sales (origin) and payroll are reported by state. Wholesalers' property ratio is based on the statewise location of inventories which is a major component of wholesalers' property and is distributed by state. In view of the relatively localized nature of wholesaling, the destination of sales and the origin of sales are assumed to be similarly located.

Retailers sales (origin) and property (that is the inventories, shops and equipment used in the making of sales) are similarly located on the basis of sales (origin) reported by state. Retailer payrolls are also reported by state. Sales (destination) are, in view of the localized nature of retailing, distributed in the same pattern as sales origin.

Sales (origin), payroll and property of services are available by state from Census publications. In this instance sales (origin) is a nearly perfect surrogate for sales (destination) because of the nature of services.

Apportionment ratios for medical services must be separately estimated. The number of physicians in an office practice in the District relative to the number so practicing in the United States is the ratio that is used as an approximation of the payroll and property ratios. Sales (origin) and sales (destination) are similarly distributed among the states and the sales (receipts) of medical proprietorships is reported by state in the Internal Revenue Service publications. Since proprietorship tax data reflects place of residence of proprietors, the Internal Revenue Service data for the District is adjusted upward to

include the non-resident medical practitioners. This adjustment is based on the District's resident non-resident relationship for other professional groups for which Census data is available.

Receipts (sales origin) and payroll are reported by state for construction activities. It is assumed that property is distributed in the same pattern as payroll, and sales (destination) are assumed to follow the sale (origin) pattern because so much of construction activity is specific to the construction sites.

The several apportionment ratios for transportation and public utilities could not be distinguished one from the other. In order to have a general estimate of the size of apportionment ratios for this industry group, earnings and employment in the District relative to earnings and employment within and without the District were calculated from the Department of Labor 1976 Earnings and Employment Data and from 1974 local area personal income data published by the Department of Commerce. Both ratios are .0070. These values are included for all four apportionment ratios for this particular industry.

These ratios are then combined in various formulas to show the revenue effects and interindustry tax liability consequences of various formulas such as those included in Table X in this report.

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